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KING COTTON IS SICK

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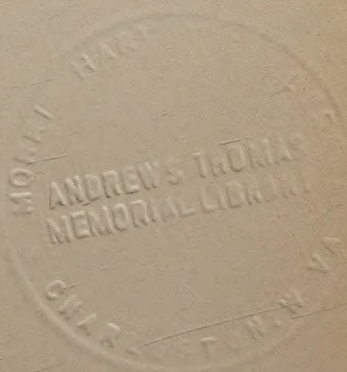
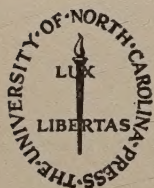
KING COTTON IS SICK

BY CLAUDIUS T. MURCHISON

Professor of Applied Economics

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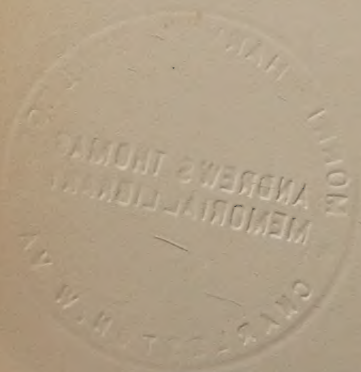
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FOREWORD

In 1926 I was mildly curious that the cotton textile industry in all areas should be exhibiting signs of economic distress when business as a whole was exceptionally prosperous. Still greater was my perplexity in 1927 when the industry suddenly became reinvigorated, earning fairly good profits in most quarters although business as a whole throughout the country was undergoing substantial reaction. In 1928, with general business again on the upturn reaching for new high levels of prosperity, the cotton textile industry turned downward, sinking into new depths of economic depression. Thereupon my state of bewilderment became too great for passive endurance.

It was obvious that forces of a general or pervasive character could not be accounting for the perverse behavior of the industry; and it was not evident on the surface that any important set of new, specific influences could be readily identified. The industry had been upset by no radical changes of organization, machinery, method, raw materials, or marketing opportunities. There had, indeed, been a quickening of the territorial shift southward. But was this cause or effect? Moreover, the regional movement was consistent in character and hence could scarcely be the primary factor in

a behavior whose chief characteristic was inconsistency.

The riddle constituted an irresistible challenge. So is explained the present volume.

The motivation has been exclusively that of intellectual interest. To reach the objective it has, fortunately, been unnecessary to touch upon the controversial issues of labor and capital relationships. Some aspects of wages, employment and hours have been referred to, but as symptoms or manifestations of a situation. They have no important place in the argument which is concerned wholly with the explanation of depression and the possible remedies therefor. The same attitude has been taken toward the condition of low and declining profits. Income to capital has suffered relatively more than has the income to labor, and largely for the same reasons, so far as the past six years are concerned.

Taking for granted the deficiencies which the industry exhibits both to capital and labor, and without prejudice to either, my task was to find those obstacles the removal of which would leave the way open for a more dependable and economically just compensation of both groups. If there is any bias in the study, therefore, it consists of nothing more than the major presumption

that each industry in a society of free enterprise is expected to pay for itself.

Although the cotton textile industry is world wide in scope, and is at present stagnant with depression in all countries, the discussion relates only to the American division of the industry. This has seemed an entirely logical proceeding, since textile manufacturing in the United States is essentially a home-market industry, depending but little on foreign markets, while enjoying adequate protection from foreign competition in the domestic market. It is probable that an understanding of the plight of the British textile industry would rest upon a wholly different analysis from the one here presented of the local situation.

Since the possibilities for economic investigation in the individual industries of the United States are limitless and command an increasing interest, I am venturing to express the hope that the present undertaking will provide some degree of encouragement and suggestion to those inquirers who are cramped in their efforts by timid adherence to the academic conventions which have in recent years so hardened and desiccated the procedure of research. If one's urge is toward understanding, statistical behavior reveals but little except in the light of associated human be-

havior; and in a dynamic society, knowledge of structure, organization, materials and production technique is barren without the complementary notions bearing upon their adequacy and adaptability from the point of view of the entire process which they are supposed to serve.

So in the pages that follow we have dealt with human reactions fully as much as with material bases; with interrelationships as much as with single entities; with entire sequences as much as with parts; with forces that are external to the industry as much as with those that are internal.

Much of the work had to be done afield requiring extensive visits to New England and southern textile centres and to the primary cloth markets. A large part of the expense incident to this phase of the project was very generously borne by the Institute for Research in Social Science at the University of North Carolina, by the Social Science Research Council, and by the Smith Fund which is administered by the Graduate School of the University of North Carolina.

It is a pleasant duty to speak in high admiration of the many members of the industry, of the textile press and of the Cotton Textile Institute who so courteously and unfailingly placed their time and facilities at my disposal. Not infrequently my informants were unaware, certainly

unassured, of the character and spirit of the investigation. Incessantly harassed as they have been by investigators, their kindly coöperation is especially deserving of appreciative acknowledgment. Though the bread which they cast upon the waters cannot return to them fourfold, I lay the present work at their feet in the hope that it may constitute at least a small crumb.

CLAUDIUS MURCHISON

Chapel Hill

September, 1930

KING COTTON IS SICK

I

King Cotton is sick. Though his illness was somewhat intensified by the stock market crash of 1929 and the ensuing events, it is in no sense due to that episode. He has not been a well monarch since 1923. From that time to the present, with the exception of certain short intervals as in 1927 and the first half of 1929, he has been steadily growing worse.

The event is all the more alarming in that the illness had persisted for some years and in fact had reached a highly aggravated state during a period when all of the other important personifications of American business were enjoying the best of health. His ailment is clearly not endemic in character, even though at the moment no great vigor is being enjoyed by any of the industrial royalty.

As compared with a year ago, July, 1929, the automobile industry has suffered a decline even more drastic than textiles. At the moment the building trades are almost as badly off, the railroads in scarcely better plight. Factory production in virtually all industries is down sharply from the levels of 1928 and the first half of 1929, and

the spectre of unemployment shows its grisly head more boldly in all areas than at any time since 1921.

Yet the belief is general that as regards the automobile industry, the building trades, the railroads and so-called business as a whole, the present depression is in the nature of a temporary cessation and that shortly they will again enjoy the high prosperity of the past six years. No such confidence prevails as regards textiles. That industry is commonly classified with bituminous coal and agriculture as being a division of economic activity in which conditions are so fundamentally unsound as to preclude any marked degree of optimism.

Certainly an industry which failed to share the great national prosperity of the period from 1925 to August, 1929, cannot be expected to display the energy and resourcefulness to recover quickly from the extreme depression of 1930. So it is not illogical that the illness of King Cotton should be regarded as distinctive in character and largely unrelated to the health conditions of our economic activity as a whole. To be sure there will be for him no funeral; but is he destined to be the victim of a chronic invalidism?

It must not be supposed that King Cotton's illness has expressed itself as inability to supply

his products in sufficient volume to meet the needs of society; neither has there been retrogression in the quality of his products. So far as the technical processes of manufacture are concerned substantial progress has in fact been made; and no one can say that in this period of illness the machinery and plant of the industry have declined in mechanical efficiency.

Neither can it be claimed that the industry as a whole has suffered from lack of an expanding market for its products. Both the total and per capita consumption of cotton goods have steadily increased. Certain types of cloth have lost favor in the public eye, as for example gingham, the present output of which is only about one-half of the 1923 output. But other types have gained ground to an extent more than adequate to compensate for the backward numbers. To be sure changes of this character impose upon the industry expensive readjustments in plant and equipment and occasion heavy losses from the depreciation of suddenly depopularized inventories, but in themselves they cannot account for the persistence and the universality of the current depression.

Rayon has created its problems for the industry, but has not encroached upon the consumption of cotton goods to the extent commonly believed. It has affected quality rather than quantity, impos-

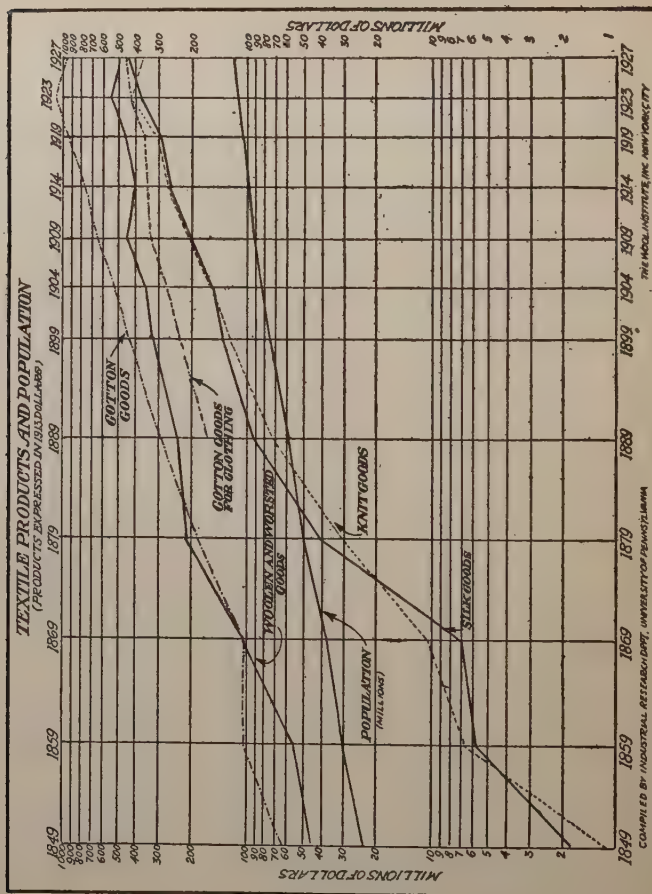


FIGURE I

The above chart is from the pamphlet, "Why Must Wool Weavers and Spinners Organize?" by Prof. Alfred H. Williams of the University of Pennsylvania. Distributed by the Wool Institute, Inc., New York City.

ing a heavier tax upon converting, finishing, and merchandising factors than upon the weaving mills.

That the supremacy of cotton has not yet been seriously threatened is indicated by the following table:

YEAR	CLOTH CONSUMED (Yards)	RAW COTTON CONSUMED (Pounds)
1909	5,960,842,000	2,505,063,000
1914	6,549,334,000	2,666,001,000
1919	5,684,106,000	2,756,117,000
1921	6,258,631,000	2,338,697,000
1923	8,018,669,000	3,186,391,000
1925	7,307,500,000	2,960,453,000
1927	8,478,396,000	3,436,621,000
1929		3,389,529,000

In 1899 the per capita American consumption of cotton cloth was 57 yards; in 1923 it was 72 yards; in 1925, 64 yards; in 1927, 71 yards. This exhibit does serious damage to the contention that changes in fashion and the substitution of artificial fibres are in themselves responsible for textile troubles. (Fig. I.)

Further evidence that the industry has not been lacking for work to do is derived from the reports showing spindle activity. If we multiply the total number of active spindles for each month by the average number of hours worked each month, the product gives us what is known as

spindle hours,—a fairly adequate measure of the physical volume of operations.

YEAR OPERATING	SPINDLE HOURS
1922	89,308,613,876
1923	101,931,101,448
1924	84,359,693,047
1925	91,054,615,317
1926	93,941,080,761
1927	102,605,403,478
1928	96,451,049,937
1929	99,604,009,191

The decline which occurred in 1928 is explained largely by the great New Bedford strike which paralyzed the fine goods production of New England for six months. The decline in 1924 was due partly to the general nationwide depression then prevailing and partly to the extraordinary behavior of the cotton market of that year when May and July cotton oversold the fall options as much as 4 to 6 cents a pound. (This incident is discussed at greater length in Chapter III.)

Yet, despite the reassuring character of the statistics so far displayed, King Cotton is sick. The sickness has taken the form of inability to provide regular and adequate livelihoods for employees and inability to provide reasonable and dependable returns to capital invested.

Since only a small percentage of cotton mill securities are listed on the exchanges, and since

their distribution has had but little publicity, having in general been effected without the agency of investment banks, the plight of capital in the textile industry has largely been ignored. The public interest has for the most part been centred upon such things as the prevalence of low wages, long hours, and night work. The almost universal tendency in current discussions to restrict observation to one-half the picture has resulted in faulty analysis of the industry's problems and a popular criticism which goes no deeper than the general charge of poor management and labor exploitation.

If these charges are true now they must have been equally true in 1920 and in 1923. The genuinely evil days of the textile industry have come since 1923. It is a new doctrine, indeed, that in the economic process poor management survives the good; and that in a free labor market exploitation triumphs over mutual interest. Yet this doctrine is implicit in any argument that explains the textile tragedy in terms of inefficiency and exploitation. If these characteristics of the industry are present now, they must have been present in even greater degree twenty years ago.

The U. S. Bureau of Labor Statistics has computed index numbers¹ to show the relative changes

¹ Bulletin 492.

in hourly earnings of cotton mill employees since 1913, and Prof. Paul H. Douglas of the University of Chicago has computed the relative hourly earnings for labor in industry as a whole on the 1914 basis.² Although these two indexes are not exactly comparable, they are sufficiently so to satisfy our present purpose.

RELATIVE HOURLY EARNINGS IN COTTON GOODS
MILLS AND IN INDUSTRY AS A WHOLE

YEAR	COTTON GOODS MILLS	ALL INDUSTRY
1913	100	99
1914	105.1	100
1916	120.6	110
1918	179.9	153
1920	323.3	213
1922	222.4	182
1924	290.7	216
1926	231	220
1928	218.3	...

The table does nothing but indicate that the rate of growth in the wage rates of cotton goods mills is not appreciably out of line with the course of the national average.

If we restrict the comparison to certain non-unionized manufacturing industries and confine our statistics to those provided by Prof. Douglas in order to secure perfect comparability, we find

² Douglas, *Real Wages in the United States*. New York, 1920; p. 206.

that in the matter of year to year growth hourly earnings of workers in the cotton manufacturing group again fail to show a pronounced lag.³

RELATIVE HOURLY EARNINGS, 1914-1926

YEAR	COTTON	IRON AND STEEL	SLAUGHTERING AND MEAT PACKING	LUMBER (Sawmills)
1914	100	100	100	100
1916	117	124	117	111
1918	173	194	184	174
1920	314	250	229	225
1922	216	172	223	171
1924	243	216	245	187
1925	229	215	245	184
1926	214	214	246	186

Textile wages have held their own with considerable tenacity at a time when the center of population for the industry was rapidly shifting from a high to a low wage area. This does not of course prove that present textile wages are adequate, and we have not presented the tables for that purpose. But the comparisons made do render wholly untenable the notion that mismanagement and labor exploitation are factors of increasing importance in the textile industry.

³ *Op. cit.*, p. 102.

If the welfare of textile workers has been notably deficient within the last six years, the fact cannot be attributed to the inadequacy of the wage rate so much as to the irregularity of employment.

Inspection of the accompanying chart (Fig. II) showing separately the fluctuations of employment in New England and the South reveals not only wide movements from month to month, but even more graphically indicates the chronic downward movement in New England since 1923. But these curves actually underrate greatly the extent of employment fluctuation. They include all workers on mill pay rolls, regardless of the number of days within the month they have actually worked. Since it is the practice of many mills in times of curtailment to reduce the number of days worked per week or per month rather than reduce the number of workers on the payroll, a better measure of actual employment fluctuations is supplied by the monthly reports of spindle activity.

A few representative fluctuations in spindle hours are as follows. In 1924 the decline from January to July was in excess of 40 per cent. In 1926 the decline from March to July was 26 per cent. In 1929 the decline from January to December was 26 per cent. (Fig. III.)

Avoiding those comparisons which are affected somewhat by seasonal influences, we still find ex-

tremely wide fluctuations within short periods. From March 1923 to March 1924 the decline was 25 per cent. From July 1924 to July 1925 the expansion was 35 per cent. From March 1927 to March 1928 the decline was 14 per cent. From April 1928 to April 1929 the expansion was 20 per cent. From May 1929 to May 1930 the decline was 26 per cent.

This instability of operations in the industry serves to make it impossible for the aggregate number of workers to be employed for much more than 75 per cent of full time. In a recent survey made by the Bureau of Labor Statistics, the average hours actually worked in 1928 for given pay periods were ascertained for the different classes of workers in 158 mills.

The survey revealed that male picker tenders worked on an average of 78 per cent of full time; drawing frame tenders (male) 72 per cent; speeder tenders (male) 73 per cent; frame spinners (female) 73 per cent; doffers (male) 74 per cent; loom fixers 87 per cent; weavers 78 per cent.

Thus the actual weekly earnings per year for textile workers cannot be computed by ascertaining the hourly rate of wages and multiplying this rate by the number of hours constituting full time. For example, in 1928, picker tenders (male) on a

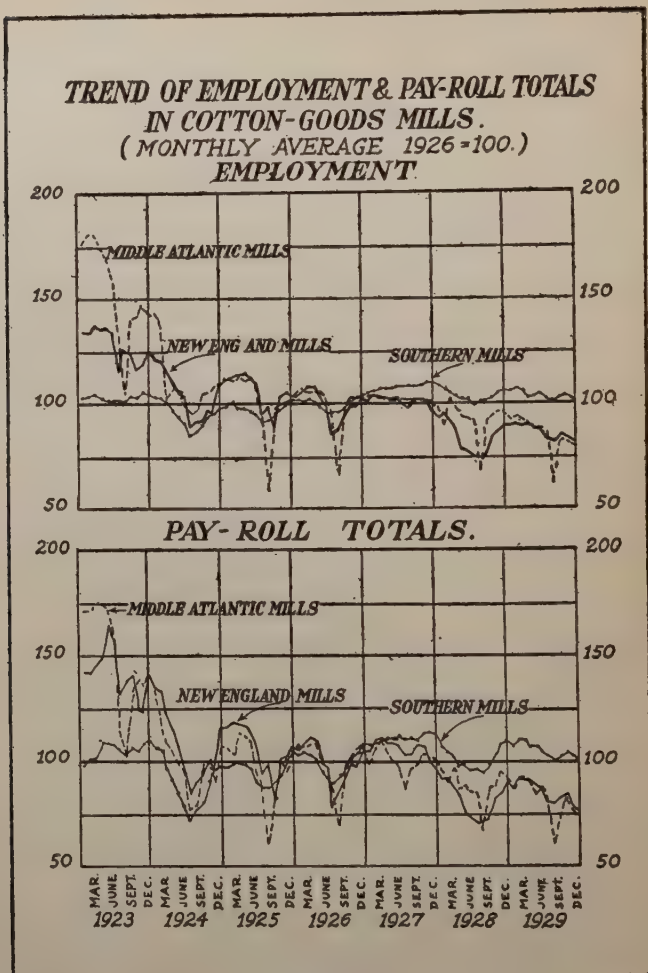


FIGURE II

From the *Monthly Labor Review*, March, 1930, p. 166.

SPINDLE HOURS FROM 1921 - 1930
(IN UNITS OF 1,000,000)

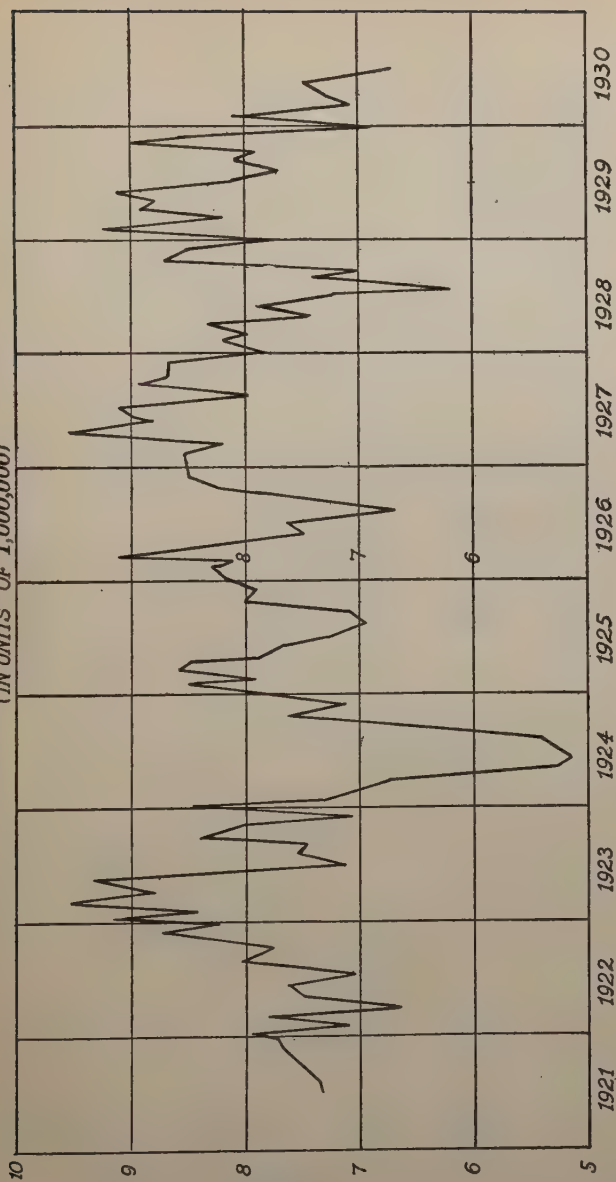


FIGURE III

full time basis would have received \$15.37 weekly. They actually received \$12.01. On the same basis drawing frame tenders (male) would have received \$15.48, but actually averaged \$11.09. For speeder tenders (male) the figures are \$19.01 and \$13.91; for frame spinners (female) \$14.60 and \$10.65; for loom fixers, \$25.88 and \$22.50; for weavers (male) \$20.93 and \$16.32.

The evidence, therefore, seems overwhelming that the low wages of the textile industry are as much due to the instability of operations as to the meagerness of rates.

Were all workers in the industry to work full time at the hourly rates prevailing in the years mentioned, the wages picture of the industry as a whole would be as follows:⁴

YEAR	AVERAGE FULL TIME HOURS PER WEEK	AVERAGE EARNINGS PER HOUR	AVERAGE FULL TIME EARNINGS PER WEEK
1914	56.8	.153	8.63
1916	56.9	.179	10.08
1918	56	.267	14.95
1920	51.8	.480	24.86
1922	52.8	.330	17.42
1924	53	.372	19.72
1926	53.3	.328	17.48
1928	53.4	.324	17.30

⁴ Bureau of labor Statistics, Bulletin 492.

In the interpretation of these wage data, it is to be borne in mind that they have all the defects which it is possible for arithmetical averages to possess. The average wage for the industry embraces twenty different occupations ranging from the simplest to the most complicated, includes both sexes and all ages, the experienced and the inexperienced, and is made up of a multiplicity of items drawn from no less than eleven states representing all types of mills, working conditions, modes of living, and methods of employee compensation.

If we turn to the more detailed reports classified by states and occupations, we find wide variations in the money wages received per hour. The data are for 1928. (B. of L. S. Bul. 492.)

	PICKER TENDERS	MALE SPINNERS FRAME	FEMALE WEAVERS	MALE LOOM FIXERS
Massachusetts	.373	.35	.431	.592
North Carolina	.262	.242	.37	.418
South Carolina	.21	.215	.313	.377
Georgia	.218	.222	.309	.379
Alabama	.213	.215	.311	.395

This table forcibly calls attention to the great differences in compensation among the most important textile states for workers engaged in similar occupations.

It is a virtually universal custom to reduce these differences to a New England average and a southern average and then draw a contrast between these two regional averages.

COMPARISON OF AVERAGE HOURLY EARNINGS IN
COTTON GOODS MANUFACTURING, FIVE
SOUTHERN AND SIX NORTHERN
STATES, OCTOBER 1928*

	SOUTHERN STATES		NORTHERN STATES		
OCCUPATIONAL CLASSIFICATION	NUMBER OF EMPLS. COVERED	AVERAGE HOURLY EARNINGS	NUMBER OF EMPLS. COVERED	AVERAGE HOURLY EARNINGS	PERCENTAGE SOUTHERN EARNINGS ARE OF NORTHERN
Males:					
Picker Tenders	774	\$.232	397	\$.380	61.1
Card Tenders					
and Strippers	1,151	.260	606	.416	62.5
Doffers	3,013	.280	932	.411	68.1
Speeder Tenders	2,415	.317	498	.483	65.6
Slubber Tenders	768	.317	336	.475	66.7
Weavers	5,738	.341	4,588	.456	74.8
Loom Fixers	2,089	.399	1,452	.602	66.3
Females:					
Trimmers					
or Inspectors	1,113	.208	1,142	.273	76.2
Spooler Tenders	3,119	.209	1,498	.314	66.6
Spinners, Frame	6,962	.228	3,456	.373	61.6
Drawers-in, Hand	453	.283	537	.363	78.0
Speeder Tenders	722	.285	2,273	.383	74.4
Weavers	3,759	.308	4,364	.425	72.5

* Source of the basic data: *Bulletin of the United States*

However valuable the table in its broader implications, it has the effect of over-simplifying the problem of wage differentials, since the wage differences between North Carolina and the states to the south of her are almost as striking for most occupations as the differences between North Carolina and Massachusetts, except in the case of the loom fixers.

From these wage differentials false deductions may be easily drawn. It is commonly supposed that the difference between New England wages and southern wages goes for the most part into the pockets of southern mill owners as additional profits. However, a comparison of the products turned out by the mills in the lower wage areas with the products of mills in higher wage areas indicates that low wages are a corollary of low priced products. Coarse yarns and coarse fabrics constitute the products of cheap labor. New England has simply discontinued her manufacture of ducks, drills, osnaburgs and coarse yarns and the transfer of their manufacture to the southern states has put them on a definitely lower price

Bureau of Labor Statistics, No. 492. The five southern states comprise Alabama, Georgia, North Carolina, South Carolina, and Virginia, the six northern states, Connecticut, Maine, Massachusetts, New Hampshire, New York, and Rhode Island. With the exception of female drawers-in, only occupations represented by 1,000 or more employees have been included in the above table.

basis. Thus from a productivity point of view, the weaver who is turning out osnaburgs in Georgia is simply not comparable to the weaver turning out fine voiles and crepes in New England.

Were the low rates prevailing in Alabama, South Carolina and Georgia indicative of any advantage to the producers of fine goods, no one could doubt but that the movement southward of fine goods mills would have been as rapid as the movement of coarse goods mills.

Nevertheless in the manufacture of those goods for which they are prepared the southern states undeniably possess an advantage. This advantage has had much to do with the confusion which has beset the industry within the last decade, yet it has on the whole been grossly exaggerated. Unmeasured factors such as differences in the efficiency of labor, gratuities to workers in the form of rent or other services are not reflected in the wage rate. The wage figures, likewise, are not measures of relative well-being, because they do not take into consideration local differences, sometimes great, in the cost of living.

A more exact and comprehensive comparison of the southern and New England divisions of the industry we shall reserve pending a discussion of some matters which bear more particularly upon the plight of the mill owners.

The pinnacle of prosperity, for peace time years, was reached in 1923. That year may be regarded not only as the peak year of profits, but also as the year in which the crest of physical expansion was reached. The many decades of virtually uninterrupted growth of plant capacity came to an end in 1923.

In that year the industry possessed 36,260,000 spindles which were classified as "active." Since then the active spindles have been steadily declining.

YEAR	OPERATING SPINDLES	DECREASE IN ACTIVE SPINDLES
1924	35,849,338	410,993
1925	35,032,246	817,092
1926	34,750,266	281,980
1927	34,409,910	340,356
1928	33,569,792	840,118
1929	32,417,036	1,152,756

Most of these spindles have gone out of business by way of the bankruptcy or voluntary liquidation route. As rapidly as defunct spindles pass out of operation, the remaining spindles make up for the deficiency by greater resort to night work. The cause and effect relationship should not be confused. There has been no resort to night work from a conscious sense of deficiency; but rather from a desperate attempt to reduce costs. The pressure for economy has forced many New

England mills to undertake night operations, despite their inability to employ women at night.

In its 1928 survey, the Bureau of Labor Statistics found that of 158 mills investigated 72 were working at night. Of the 23 Massachusetts mills included, ten had night shifts; 13 out of 23 South Carolina mills were working at night; 12 out of 16 Georgia mills; 18 out of 52 North Carolina mills; 5 out of 6 Alabama mills; 2 out of 3 New York mills; and 5 out of 15 Rhode Island mills.

The behavior of the textile industry is spangled with astonishing inconsistencies and incredible paradoxes. In the pages to follow many of them will be recounted; but none will seem more beyond understanding than that while 12 per cent of the industry's equipment is being junked because of lack of orders, the other 88 per cent should be lashed into an artificial fever of excitement to keep from suffering the same fate,—that in the year of prosperity, 1923, the average number of hours worked by each spindle should number 2,811 and in 1929 should be 3,073!

New England has borne the full brunt of the decline in spindleage. While she has been losing 5,400,000 spindles, the South has been gaining approximately 2,800,000. The period of machinery contraction for the industry is exactly that of

the migratory movement southward. But the shift of the industry is not to be regarded so much as an aggressive constructive movement for the exploitation of new opportunities as it is a purely defensive readjustment, a maneuver to minimize the shocks of adversity.

This deduction is clearly confirmed by the profit record for the period. Since no direct measure of the industry's profits is available, their behavior may be inferred by the course of textile security prices. From 1922 to the autumn of 1929, the securities of other industries were doubling and trebling in value. Textile securities were moving in the opposite direction, and at the end of the period were selling at less than half of their 1923 prices. Especially drastic was the break in New England mill stocks. The shares of many mills have become entirely worthless. One can now pick up for ten and twenty dollars a share, stocks which were selling at prices between one hundred and two hundred dollars a share in 1923. The general average of New England mill stocks at the end of 1929 was less than one-fifth of the 1923 average.

The New Bedford mills have been famous for their profitableness. During the entire decade, 1920-1929, they paid an annual average of \$7.42 per share in dividends. But in 1929 the payments

averaged only slightly more than \$2.00 per share, and 22 mills out of 36 were paying no dividends at all.

The aggregate dividends paid by the New Bedford mills averaged \$1,258,000 per quarter in 1923. In 1929 the average was about \$240,000 per quarter, a decline of 80 per cent.

Fall River mills were paying to their stockholders \$882,000 quarterly in 1923, but only \$221,000 in 1929. For sheer pathos the economic disaster which fell so suddenly and relentlessly upon these communities is without parallel in the history of American cities.

One glimpses the extent of the human tragedy which is always inseparable from economic tragedy in the graphic and intimate descriptions supplied by the editors of the *American Wool and Cotton Reporter*, portions of which we quote from the issue of October 10, 1929.

"Fall River, once the richest cotton manufacturing city in the United States with more than four million spindles and the equivalent of more than 100,000 looms, is now operating a good deal less than 25 per cent. Thousands of operatives have been thrown out of work, hundreds of thousands of spindles have been scrapped or abandoned.

"The Ancona Company with nearly one thousand looms and complementary spindles, went into bank-

ruptcy and was sold out by the banks and is no longer in existence. The Arkwright Mills of about 70,000 spindles and about 1,500 looms lost money regularly for four or five years. The stockholders couldn't stand it any longer. The creditors closed up the mills and recently the whole thing has been sold at a very few cents on the dollar. The old Arkwright Mills Corp. is now out of business.

"The Chace Mills used to be one of the most successful concerns in the country with about 90,000 spindles and 2,000 looms, was recently closed out lock, stock and barrel at about \$12.00 per share, although the mill used to be a great money maker, paid regular dividends, and the shares used to sell at around \$200.

"Conanicut Mills, one of the old Fall River Corporations, is out of business; the Globe Yarn Company, with 54,000 spindles is out of business; the Granite Mills with about 125,000 spindles and about 3,000 looms struggled along and tried to keep running. The stockholders put up more money, the Federal Government cancelled some of the taxes and the City government cancelled some of the taxes that were long overdue. The corporation struggled along, but finally has had to give up and it is out of business.

"The Hargraves Mills which used to be a great success, whose shares sold for \$150, has had to give up and go into a reorganization.

"The Mechanics Mills with 60,000 spindles and 1,500 looms has quit; the Merchants Manufacturing

Company that used to be a great success and very rich, has recently been sold for \$40 a share, although the mill has a replacement value of nearer \$400 a share. The old Parker Mills was one of the best known in Fall River and it used to pay regular dividends and the stock sold regularly for \$150 a share, had to settle with its creditors, reorganize and go into a new company—and the shares of this new corporation are quoted at only \$6. The Pocasset Manufacturing Company with 125,000 spindles and 3,000 looms is wholly out of business. The Sanford Spinning Company with nearly 50,000 spindles is out of business. The Seaconnet Mill with about 75,000 spindles and 1,700 looms was sold for practically nothing. The Stafford Mills with 115,000 spindles and 2,700 looms is out of business. The Tecumseh Mills with 80,000 spindles and 1,700 looms is out of business.

“In Fall River in addition to those mills named above that have actually gone out of business, there are other large mills that are running very slack or have partially liquidated. For instance, the Flint Mills, one of the biggest and richest, with a long and enviable record of earnings, recently scrapped their No. 1 mill of 55,000 spindles and 1,200 looms, broke up the machinery and turned it into junk and threw it out of the windows so that they wouldn't have to pay taxes on it May 1st of this year.

“The Conanicut Mills, with 30,000 spindles and 800 looms is out of business. The Weetamoe Mills, with 110,000 spindles and 2,400 looms is in liquidation.”

The narrative of New Bedford's textile catastrophe is no less depressing. We quote it only in part.

"New Bedford used to be the great fine cotton goods manufacturing center of the country. . . . Today, however, conditions in New Bedford have changed. The great Fairhaven Mills with more than 200,000 spindles on fine combed yarns is wholly out of business. The great Manomet Mill that was built to be the finest cotton yarn mill in the world with something like 450,000 spindles is wholly out of business—not a spindle remains, not an operative is employed.

"The Penrod Mills, manufacturing fine combed yarns and fabrics, is wholly out of business and the man who controlled that mill has gone into another business entirely—not textiles at all. The Rotch Mills with 100,000 spindles on fine combed yarns is out of business. The Sharp Manufacturing Company with 200,000 spindles and 1,000 looms on fine combed yarns and fine cotton goods is wholly out of business and the machinery sold—all that could be sold.

"The Sharp Manufacturing Company was originally a fine yarn mill of about 200,000 spindles, all new machinery in a brand new mill established only a few years ago. It became impossible for the Sharp Manufacturing Company to continue in business as a fine yarn mill, so the management bought about 1,000 looms. Because the corporation had depleted its working capital through a few years of inability to

compete in the fine yarns markets, these looms were bought on time payments. Business got so bad that they could not complete their loom payments, and when the mill finally closed up, the loom makers recovered the looms. All the rest of the machinery was put up at auction June 18-19, 1929. The business situation in New Bedford was such that the sale was very unsatisfactory—practically none of the machinery was sold, so that not only were the stockholders wholly wiped out, but the creditors themselves have been able to recover but a few cents on the dollar of their loans.”

Some of the most spectacular of New England’s textile failures occurred in Lowell. Nowhere did the bankruptcy scythe cut its way more viciously.

“Lowell used to be one of the very richest cotton manufacturing centers in the United States. Today the great Appleton Company, whose shares used to sell for \$750 each, regularly paid large dividends and employed about 1,500 people operating 110,000 spindles and 3,500 looms is wholly out of business in Massachusetts. They have 1,500,000 square feet of floor space in the Appleton Company mills and only 115,000 square feet has it been possible to rent. The great water power of the Appleton Company at Lowell is standing idle. Two thousand operatives are out of work. Five hundred tenements are vacant. Week by week wages of \$40,000 are unpaid.

“The Bay State Cotton Corporation of Lowell, a fine reinforced concrete mill, set up at a cost of about

\$4,000,000, with nearly a thousand wide looms for the production of sheetings, a mill that was meant to be the lowest cost wide sheeting mill in the country, is absolutely empty, the machinery has been sold, the pay roll is non-existent. The mill is for sale for about \$200,000 and there are no buyers. . . . Some of the machinery was sold to go South, some to go West—all of it was dispersed. This was in fact the best equipped, finest plant physically in the country for the production of wide sheetings. Everything was done to get the costs of manufacturing down. The machinery was well stretched out. The company hired less operatives per unit than any like mill in the country. . . .

“The Hamilton Manufacturing Company with nearly 200,000 spindles and about 4,000 looms that used to make colored cotton goods, flannels, stripes, shirtings and similar fabrics is absolutely vacant. All of its machinery is gone. The mill stands idle. Two thousand people were thrown out of work here. Wages of \$40,000 a week were lost to the workers and to the city. Hundreds of homes have been vacated. Three thousand horse-power of water is unused for textile manufacturing.

“The great Massachusetts Cotton Mill that used to operate 175,000 spindles and 5,000 looms on gingham, chambrays, flannelettes, and similar fabrics, with a beautiful water-power privilege on the Merrimack River, and the most efficient high pressure steam plant in the industry is absolutely vacant, not a spindle on the property and the best mill of the cor-

poration being torn down so that a new post office can be located there. Some of the machinery was shipped to Maine, some to Alabama, some broken up for junk. Wages of \$30,000 a week are missed here and 4,500 horse-power of water is unused.

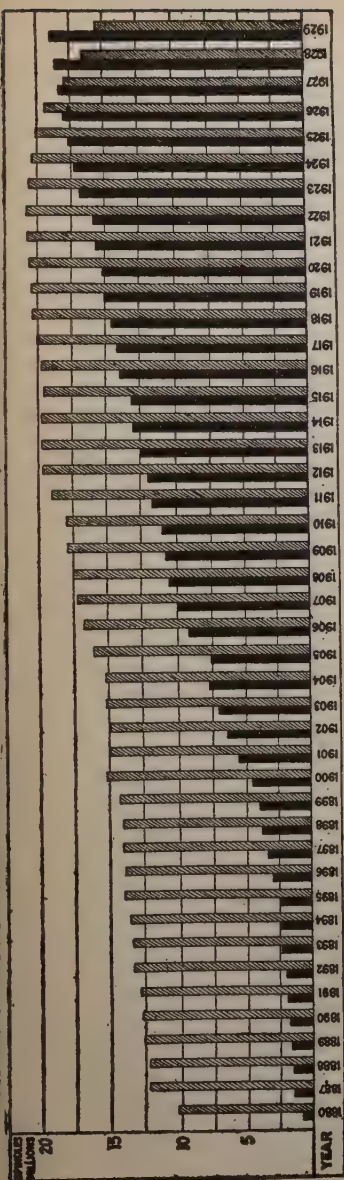
“The Tremont and Suffolk Mills of Lowell that only a few years ago was counted the most successful cotton manufacturing establishment in the United States, operating more than 200,000 spindles and more than 6,000 looms and a large knitting department, a mill that was in the habit of running day and night, year after year, paying large dividends and never owing a cent of money, is wholly out of existence. This whole property with the more than 200,000 spindles and the complementary machinery described above, including valuable water-power rights, was sold outright for \$500,000—in notes, not in cash—although the plant had a replacement value of nearer \$12,000,000. . . . Three thousand people lost their jobs here; \$60,000 per week of wages are now unpaid; 500 homes are vacated.” . . .

This melancholy chronicle could be continued to include the tragic fates of approximately 300 mills, many of them the nation's finest.

In July, 1930, the directors of the Union Cotton Manufacturing Company dispatched to the stockholders a letter which we shall reprint in part as typical of many such letters which New England stockholders received in the years from 1928 to 1931.

MILLS IN COTTON GROWING STATES

MILLS IN ALL OTHER STATES



COTTON TAKEN BY UNITED STATES MILLS-RUNNING BALES-YEARS 1880-1929 MILLS IN COTTON GROWING STATES — MILLS IN ALL OTHER STATES

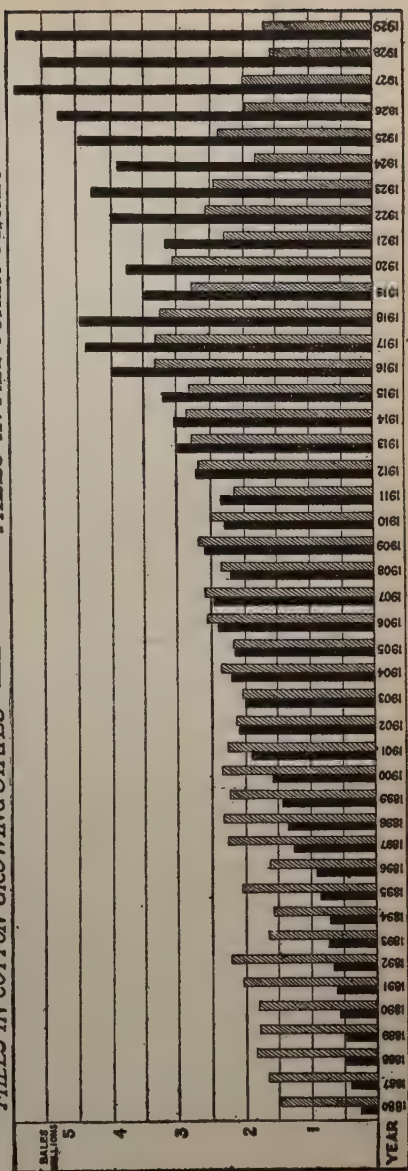


FIGURE IV

"The recommendation that the corporation be liquidated and wound up is made by your directors with reluctance and after the most careful consideration. Since 1880 this corporation has paid money dividends on its capital stock aggregating \$9,007,000. . . .

"It has also during this interval paid in taxes about \$1,550,000 and has given employment to about 850 persons under normal conditions with a weekly payroll of about \$14,000. . . .

"The plant has not been making a manufacturing profit for the last three years. . . .

"One of the difficulties is that of late years taxation of cotton mills has been out of proportion to their real value. . . .

"Moreover all goods which the Union Cotton Manufacturing Company is adapted to make are more and more being manufactured in the South at prices which we cannot possibly meet. This consideration is independent of present market conditions and appears permanent.

"The corporation has been one of the most successful in the city, and a consistent dividend payer. There are three plants comprising 100,000 spindles and slightly better than 3,000 looms of which number 800 are automatic."

There remains no room for doubt as to the seriousness of King Cotton's sickness in New England. But what of the South?

The South certainly shows no recession in physical equipment. On the contrary each year has witnessed further growth. (See Fig. IV.) Approximately a million and a half of the spindles added to southern equipment, with a proportionate amount of complementary machinery, were stripped from New England within the past six years.

Southern spindles are much more active than New England spindles, due chiefly to the greater percentage of southern mills operating at night. During 1929 southern mills with 19,006,260 spindles in place, operated 68,718,482,139 spindle hours, while the mills in other states with 15,579,044 spindles in place operated but 31,159,634,872 spindle hours. In other words southern mills with 54.95 per cent of the spindles, worked 68.80 per cent of the total spindle hours in that year.

In 1929 southern mills consumed 5,384,727 bales, or 76.33 per cent of the total cotton consumption of the United States, while mills in all other states took 1,669,581 bales, or 23.67 per cent of the cotton consumed.

In 1928 southern spindles worked 69.2 per cent of total spindle hours, and took 76.04 per cent of the total cotton consumed, while the 1927 figures were 65 and 72.97 per cent respectively.

With this remarkable maintenance of volume operations, pay-rolls have been well sustained,—in fact the wage rate has risen slightly within the past two years, until the appearance of the acute weakness of industry in general beginning in the autumn of 1929.

Yet the other elements of prosperity have been lacking for almost as long a period as in New England. Dividend reductions have been the rule rather than the exception. Even before the general collapse of 1930, it is doubtful if more than one-half the southern mills were on a regular dividend basis for common stocks. The section has escaped a real epidemic of textile failures, yet numerous mills have been sold at public auction for 10 and 20 per cent of their replacement values, and a considerable number of others have been quietly “taken over” by their commission houses in lieu of a settlement of their loan accounts.

On July 10, 1930, the plant and properties of the Globe Manufacturing Company of Gaffney, South Carolina, were sold at auction. There were only two bidders. The company had outstanding, as reported in *The Textile World*, \$50,000 of common and \$100,000 of preferred stock, and had an indebtedness of \$520,000. Its physical property consisted of the brick mill building, 7 warehouses,

28 dwellings, a store building and 34 acres of land, all within the corporate limits of Gaffney. It was equipped with 5,560 spindles and 158 looms. It sold for \$20,000.

One of the best managed and most competently financed groups of mills in the United States is the group associated with the Cone interests. Referring to one of the mills in a recent address, Mr. Bernard Cone described its plight as follows:

"I have been making out the income tax returns of that mill for the past six years. In three of those years it made a profit and in three a loss. The aggregate loss of the three years was greater than the aggregate gain of the other three. . . ."

Speaking of his Greensboro mills which are the largest denim producers in the world, Mr. Cone said:

"Yes, we've managed to make some money up there in Greensboro. We have large mills, a tremendous unit, enormous production and consequent low overhead. In recent years, it has been revamped and re-equipped with new and up-to-date machinery, has been efficiency-ized by experts, and aside from its President, whom modesty eliminates from the running, we believe it to be well and ably managed.

"I have made its tax returns also, and I happen to know that in this same six-year period I was talk-

ing about, 1924 to 1929 inclusive, it averaged earning of three and four-tenths per cent on its investment,—less than ordinary savings bank interest.”

The general situation is best reflected by the prices of southern mill shares. According to the index computed by R. S. Dickson and Company of Charlotte from the prices of twenty-five leading issues, the average of these shares in July, 1930, was less than one-half of the 1923 average. In the six-year period it had declined from \$144.50 per share to \$71.48, a shrinkage of \$73.08 per share. Assuming the same degree of deflation for the southern textile industry as a whole, this represents an estimated shrinkage of quoted values exceeding \$100,000,000.

This may be prosperity as compared with the New England division of the industry. It is assuredly not prosperity in relation to accustomed American standards.

Clearly the industry as a whole is struggling against adverse forces which southern production economies fall far short of offsetting. As influences making for further inter-regional readjustment they have no doubt already passed their crest. The transfer of those fabrics and yarns in whose production a low wage rate is of primary importance is pretty well completed.

THE DOWNWARD TREND OF SOUTHERN COTTON MILL SHARES

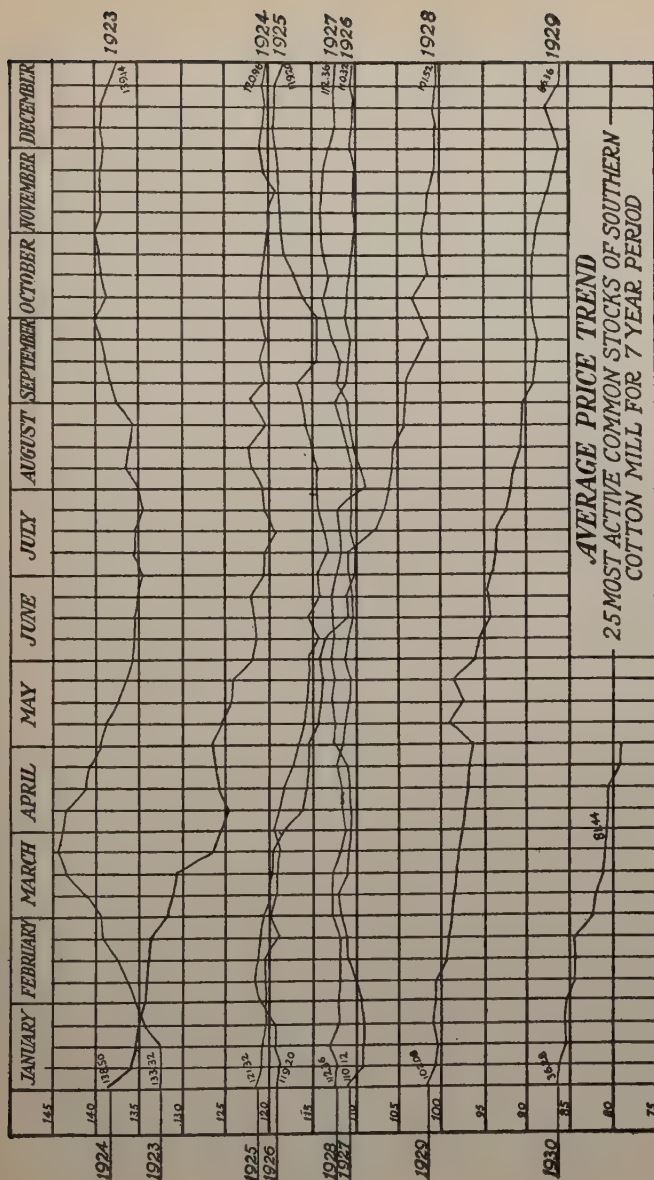


FIGURE V

The South was in 1927 making 84 per cent of the sheetings in yards; 82 per cent of the print cloth; 74 per cent of the shirtings; 71 per cent of the gingham; 87 per cent of the denims; 94 per cent of the drills; 83 per cent of the yarns made for sale. In all cases where there is a wide quality range the yardage percentage is in considerable excess of the value percentage, indicating that New England has retained the manufacture of the finer constructions. This is not to say that the South does not turn out fine goods in large volume. There are many southern mills whose ability to make the finest goods is no less than that of the best New England mills; but in the manufacture of these fine goods the labor cost differential is of less importance than the skill of management and the quality of the machinery. Hence their drift southward will be at a slower rate, awaiting the training of personnel and the development of techniques.

Convincing statistical proof of this conclusion is available if we compare wages by states, occupations and sex in terms of actual earnings instead of standard rates, and make proper allowance for the character of goods produced.

Let us take, for example, the wages of male weavers in North Carolina and Massachusetts. The average actual earnings in North Carolina

per week in 1928 were \$14.59 and in Massachusetts \$18.23. These are the figures reported by the Bureau of Labor Statistics and if they seem unduly low, it is partly because they represent pay only for time actually worked. The difference in pay is \$3.64 per week in favor of the Massachusetts worker. Proceeding to make allowance for qualifying factors, we find that the Massachusetts worker was on the job an average of 42.2 hours per week, whereas the North Carolina weaver worked an average of 39.4 hours per week. If we make allowance for this time difference of 2.8 hours by (allocating to the Massachusetts weaver the same working time) subtracting it from the time worked by the Massachusetts weavers, we find that the latter if working the same number of hours as their southern fellows would receive \$17.03. This reduces the earnings differential for comparable pay periods to \$2.44 per week.

As a partial offset to this differential the most important item is the rent gratuity which southern mills accord their workers. In the mill villages throughout North Carolina the customary rent is a dollar a room per month,—four dollars for a four room house. Some of the mills allow free rent during periods of sharp curtailment. This four dollars, which includes water and light, compares with a rental of \$20.00 to \$25.00

a month for similar houses rented from other landlords in neighborhoods adjacent to the mill.

The quality of the houses supplied by the mills varies tremendously of course from village to village. The American Cotton Manufacturers Association in a survey arrived at the conclusion that the value of the worker's rent gratuity varied from \$1.50 to \$4.36 per week.

Mr. Bernard Cone, whose mills are equipped with villages of a very high standard of comfort and attractiveness, made the following statement as to their wage equivalent: "I have figured that in our case, this item of cheap rent alone means an additional wage of about \$2.50 per week per employee. Through North Carolina as a whole, I should say it was safe to count this item as \$1.50 to \$2.00 a week extra wages."

If we take Mr. Cone's minimum figure as the one to be regarded as typical and apply it to the wage differential, it reduces it to 94 cents,—bearing in mind that our calculations have assumed the same working time, 39.4 hours per week, for both sections.

This residual difference of approximately one dollar is large enough to be of importance from the point of view of managements making similar products. As we have already seen, however, the events of the past few years have rendered the

great bulk of southern and New England products essentially dissimilar. They still fall to a large extent into the same general classifications, but the value per yard added in manufacture by the New England mills is decidedly higher. This obviously supports the inference that somewhat higher skills even within the same occupational groups are required by the New England mills. For this skill differential, allowance is nowhere made in the comparative wage statistics. In the present discussion we can do no more than recognize its inevitability, and suggest that in all likelihood it counterbalances the dollar differential mentioned above. But again it must be emphasized that this particular element in the wage differential comes to the surface only when we are comparing the bulk of southern goods as they are with the bulk of New England goods as they are. It is reduced to virtual non-existence when we compare regional wage costs of a fabric which is being produced in the same grade in both sections.

In the illustration which we have just been using, a greatly shortened work week was attributed to both sections,—a procedure which accords closely with the facts as they have existed in the last two years.

Were the industry on a sufficiently sound and prosperous basis to permit full time operations in

both sections, the advantage would be definitely on the side of the Southern mills. With the industry so irregular and sporadic in its operations, as it has been for several years, the longer hours which constitute the standard southern working day cease to have much significance in wage comparisons, and the southern employer definitely loses much of the advantage in wage costs which he would otherwise have.

The conclusion seems to be warranted that the industry has finally worked itself into the situation where inter-regional competition on a labor cost basis is, or very soon will be, of negligible importance. This conclusion would not have been valid five years ago. Its present validity is based upon the magnitude of the shift which has already occurred in the industry's operations.

If one is disposed to dilate on the large difference in the wages between Georgia or Alabama weavers and New England weavers, the argument simply has no point. Georgia and Alabama weavers are no longer competing with New England weavers. As between those sections the adjustments have been made. They are not any longer making important quantities of osnaburgs, ducks, and drills, et cetera, in New England.

Southern textile expansion has been materially aided by the availability of cheap electric power

since this item constitutes from four to five per cent of production costs. Hydro-electric developments in the South have been installed with great rapidity, coördinated into giant super-power systems and now supply electrical drive to about two-thirds of the cotton mills. In the Piedmont area economic utilization of water power resources has closely approached the maximum, yet proximity to the West Virginia coal and gas fields will always assure for this section a favorable situation as regards power. However, as a dynamic influence in the cotton textile movement its importance in the future will be less than it has been in the past.

Another advantage claimed for the South and one which has attracted a great deal of attention in New England, is an alleged lower rate of taxation on business enterprises. Here again an exact general comparison is impossible, due not only to the great variations from one locality to another in the matter of rates, but also to varying practices relative to the making of appraisals. Local rates and assessments will vary widely in the same state.

In 1927, Mr. H. L. Macon of the University of North Carolina, carried out an investigation to ascertain the amount of state and local taxes which would be levied on given hypothetical cotton

mills in selected towns and cities in different states. His study indicated an appreciable tax advantage for most southern mills. The information was gathered directly from the city and county tax supervisors of the communities studied and so should be fairly dependable. In 1929 and 1930 tax abatements were permitted to cotton mills rather generally by New England cities, and in many cases a permanent lowering of rates and assessments has been secured. With New England straining to reduce the burden of governmental levies, there is no disposition on the part of the southern states to press for lighter taxation for competitive advantage. The greater likelihood is that the increasing fiscal needs of the South will necessitate tax revision upward at least to a point commensurate with tax levels in other sections. It is not likely that taxation differentials will continue to operate as important dynamic influences in any further territorial readjustments of the textile industry.

The most persistent and widely held of the popular fallacies relative to southern advantages in textile production is that proximity to the cotton fields means cheaper raw material. But in fact the advantage of this proximity is very slight. Most of the mills are located in the Piedmont area of North Carolina and South Carolina,

whereas the greatest cotton growing states are further south and southwest. Moreover, in order to get the right length of staple and the proper "character" of cotton for their special uses, the mills have to make most of their purchases from merchants located in the great primary cotton markets. Hence it is doubtful if more than one-third of their cotton requirements can be met by the states in which they operate.

This means that for most of their cotton southern mills must pay freight rates not markedly lower than those paid by Fall River and New Bedford.

Mr. Charles Grossman of the University of Texas has computed the freight differentials for Fall River, Greensboro, Greenville, S. C., and Columbus, Georgia.⁵ If the freight rates to these southern manufacturing points are expressed as percentages of the Fall River rate, Mr. Grossman found that: "Greensboro does not save more than 21 per cent of Fall River's rates on all cotton coming from states outside of North Carolina, South Carolina, Georgia and Alabama; while 26 per cent is the maximum saving of Greenville, S. C., Columbus, Georgia, being located on the Alabama-Georgia border, saves no more than 34

⁵ Grossman, *The Possibilities of Cotton Manufacturing in Texas*, Austin, 1928.

per cent of the Fall River rate on all cotton grown outside its neighbor states, South Carolina, Alabama and Mississippi."

Resolving these shipping costs into percentages of total raw material costs, Mr. Grossman found that: "On a large part of its raw material, therefore, the advantage of the industrial southeast over New England runs from 0.16 per cent to 1.5 per cent of the cost of cotton at Fall River. . . . so that the handicap to New England mills will amount to from 0.27 per cent to 0.67 per cent of total costs." It would require a much larger saving than this to render the item of any material importance.

Its advantage, such as it is, in many cases is partly or completely offset by the greater freight costs which southern mills must bear in transporting gray goods to the New England finishing plants. New England is still in possession of the greater part of the finishing capacity of the country. Moreover finished goods moving from New England have cheaper access to the great cloth markets than do southern goods. After all factors are considered, southern mills can scarcely be said to have transportation advantages over those of New England.

If the analysis here given of the competitive situation between the South and New England seems in conflict with the opinion which has be-

come standard, it is because the present discussion is giving maximum weight to the events of the period from 1923 to August, 1930. It does not question the effectiveness of the cost differentials which were computed and given such wide currency, say, up to 1925. Our contention is merely that these differentials no longer have wide application. The readjustments toward which they were driving the industry have for the most part been reached.

To illustrate further the point which is under emphasis, we shall refer to a comparison of southern and New England mill costs made about four years ago by Mr. George S. Harris, ex-President of the Exposition Mills in Atlanta, and one-time President of the American Cotton Manufacturers Association. Mr. Harris had been associated with mills in both areas, and is reported to have said that in the particular cases under observation, the cost of labor in the New England mill was four cents greater per pound of production, the cost of power was 3-4 cents per kilowatt hour greater, that taxes were almost double the taxes paid by the southern mill, and that the working time was 48 hours weekly. Continuing he states that:

“These conditions give them (the New England mill) a production of only about three pounds per spindle weekly, or 300,000 pounds total, if

working at full daylight capacity. If the mill were in the South, it would operate at least 55 daylight hours, increasing the weekly production to 340,000 pounds, or about 13 per cent. It would also be possible practically to double this production with night operation at slight increase in cost per pound. On daylight operations the difference in manufacturing costs in favor of the southern mill would be about 5 cents per pound which would mean a saving of about 850,000 dollars annually on a production of 17 millions pounds.”⁶

That the facts here given so concisely by Mr. Harris are entirely authentic and trustworthy cannot be doubted. But New England has already made its response to them by virtually giving up the manufacture of the particular constructions which were referred to. Hence to those who are concerned with the future destinies of the industry rather than with its recent adversities, the major facts to be faced and the more important issues to be solved are far removed from the question of inter-regional competition.

⁶ *The Textile World*, July 23, 1927, p. 37.

II

KING COTTON'S DOMAIN

King Cotton has not chosen to make his realm easy of inspection. Of ancient origin, he has retained certain old-fashioned ideas of privacy which he indulges with remarkable success. Not that he opposes the inquisitor with repulsion or undue deception. On the contrary he welcomes with grace and suavity. His seclusiveness results from the division of his domain into many unlike provinces each palpably dependent upon the others but effecting its intercourse with them through devious and indirect pathways.

The distinctive and basic characteristic of the kingdom is not to be found in the doings of any one division, but lies in the intricate maze of interconnections. So labyrinthian and complicated are the roadways with their many turnings, crossings, blind alleys and toll gates that very few of the inhabitants of one district ever succeed in penetrating to the boundaries of another. They carry on their essential traffic as best they may, knowing scarcely more of each other's thoughts and operations than does an army of the movements of an enemy when its only knowledge is gained through the use of daring runners.

So the visitor to this mysterious kingdom rarely sees more than a portion of it and understands that portion but little in its relationship to the whole. If he be of romantic disposition he is likely to end his observations in the cotton fields where tuneful darkies gather the fluffy staple from the arms of smiling Pan, or at most follow the gleaming fibre to where it is massed on wharf or levee for passage to multitudinous destinations.

Another type of observer finds nothing of interest until he comes upon the great sprawling structure of brick with its brood of encircling cottages, known to song and story as the mill village, whose densely thronging citizenry, male and female alike, combat frenzied dust-emanating machines all day and sleep within their roar at night, or vice versa, to no end but anemic bodies and still more anemic pay envelopes; the while their employers, the textile barons, fatten from their labors, and gleefully drink bacchanalian wine, symbol of their blood. And so he tells to the waiting world another story presumably definitive.

But no story of the mill and its village has finality unless its inhabitants are related to the environment whence they came and the alternative occupations to which they may turn. And no story of the "baron" is complete until he is seen

in his struggles with those who supply his materials and those who engineer the distribution of his products. Stripped of his legendary draperies, he is seen as quite an ordinary individual quelled in his ambitions and restricted in his activities by economic antagonists quite as strong as he and, in recent years, more often than not defeated in the battle of the markets.

Closer to the general public than either plantation or mill but usually overlooked because of the smallness of its payrolls and the noiselessness of its operations is that mysterious part of the domain known as Worth Street. An unobtrusive section of New York's lower west side, it is commonly regarded in so far as it is noticed at all as the bottle's neck of the textile industry.

Through its narrow canyon must indeed pass the major part of the industry's output on its way to the shelves and storerooms of merchants and garment manufacturers, but one is in grave error to assume that these distributive functions are performed only in the manner of an intermediary. What is commonly overlooked is that Worth Street plays the rôle of head as well as of neck; not that its headship is official or even admitted, but it is there just the same. It might indeed be truthfully called the seat of King Cotton's prime ministry. But it is a strange ministry, which sar-

donically accepts the powers and immunities of control without its responsibilities.

Allied neither to Worth Street nor to the mills, but essential to both, friendly to both, and inimical to both—in this industry there is no truth that is not paradoxical—is that other important division of King Cotton's domain (the converters) which determines how the products of the industry shall look and feel. All of the apparel, the house furnishings and the fabric trappings generally of mankind pass through the hands of this group and thereby become the mode. Shall fabrics be thick and heavy or fragile and sheer, shall colors be rich and deep, or light and flaming, shall surfaces be soft and lustrous or hard and lifeless; shall patterns be smart and cubistic or plain and subdued, shall the mixtures be cotton and rayon or cotton and silk, or cotton alone? These questions and many more are answered in their own good time and convenience by those whose business it is to do that, and until their judgment is rendered the plans and works of mills, merchants, the denizens of Worth Street, the makers of garments, and those who furnish and decorate, are in the laps of the gods.

And so it is that in the composition of this curious industry it is so arranged that those who are strong are also weak, and that the mountains

come to Mohammed with great frequency and resignation.

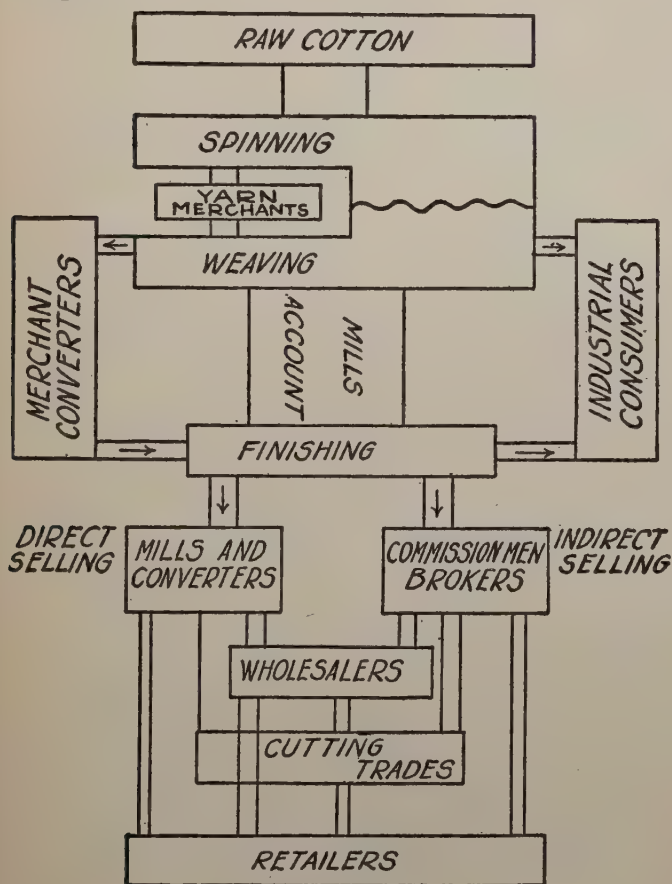


FIGURE VI

With the use of a less figurative terminology we shall now portray in somewhat greater detail

those relationships which our birdseye view has shown to be so quaint.

The first process in cloth manufacture is that of spinning. Approximately one-fourth of the total number of "cotton mills" are exclusively spinning mills. Most of the weaving mills also have spinning departments, but many of the weaving mills do no spinning preferring to purchase their yarns. When both spinning and weaving is carried on in the same mill, there is rarely an exact balance between the two. In many cases the spindles will be kept running day and night in order to supply the looms which operate only by day; or again where a mill uses yarns of various degrees of fineness, it may be equipped to produce for itself only those "counts" which it most depends upon.

Whatever lack of balance may be present as between the yarn and cloth producing machinery of the unit is easily offset by operations in the yarn market in which mills with equal readiness dispose of their surplus or compensate for their shortage.

By the term "count" is meant the degree of fineness or coarseness, the lower the count the coarser the yarn. For example, counts of 8, 10 and 20 refer only to coarse yarns; 30's, 40's and 50's are known as medium counts; the finer grades range from counts of 60 to 120 commonly, although a

small proportion of exceptionally fine yarn is being spun in counts which range as high as 150, and over.

Commonly a mill is equipped to produce only one general classification of yarns, specializing either in low, medium or fine counts. Such concentration is found advisable not only because of the different types and adjustments of machinery, but also because of the different mixtures and qualities of cotton which are required for the various grades.

Yarns are not only classified according to count, but also according to whether they have gone through the combing process, or that of carding. The entire distinction between the two is too technical for treatment here, but in general it may be said that combed yarns are superior for quality goods, because of longer fibre and a processing which achieves greater smoothness and tensile strength.

The inability of the average mill to change readily the quality and count of the yarns which it produces is partly responsible for the very unwieldy situation in the spinning division of the industry. It frequently happens that style changes in the cloth markets are of such a character as to occasion fluctuations in the proportions of the various counts of yarns required in weaving. For

example, if the cloth trend is for the time toward finer goods an increased proportion of fine yarns is obviously necessary, yet the ability of the spinning mills to make this adjustment is definitely restricted.

In the yarn markets we should expect to find the price differential between the different classes and grades of yarn approximately constant since changes in cotton costs and labor costs presumably should affect all grades of yarns in approximately the same degree. Yet, in actual practice, we find that the maintenance of constant differentials not only does not occur, but frequently is departed from so violently as to cause one grade of yarns to be on a profitable basis at a time when another grade of yarns will be selling at a loss. This particular deficiency of the industry in the matter of balanced production for yarns is thoroughly typical of its lack of flexibility in all of its divisions. We shall have occasion to see later that the various cloth constructions are produced under conditions so radically different as to set up the appearance of actually distinct industries for the various types of goods produced.

As in the case of the spinning mills, the cloth mills find it desirable to specialize on a closely related group of fabrics. Where broad looms of the modern automatic type are in use, it is usually

possible for a mill to show considerable flexibility in adjusting itself from one type of fabric to another. But the majority of mills are not so equipped. Hence it happens that a condition of intense overproduction is likely to occur relative to a certain line of fabrics at a time when there is a condition of under-supply for certain other fabrics. This usually accounts for the highly contradictory evidences of prosperity which are to be found at any time in the cotton textile industry. It also accounts more than any other one factor for the continual stream of new mills even when the industry as a whole is experiencing adversity. Whatever be the general situation, should a particular type of fabric suddenly come into popular favor the result is practically certain to take the form of new mills devoted to that particular product whereas the logic of the situation would demand merely a readjustment of the machinery and production schedules of mills already in being.

It is not surprising that so pronounced a readjustment lag should be present in the face of demand shifts from one type of cloth to another, but it is indeed astonishing that it should be present when the demand shifts involve only slight technical changes. For example, in January, 1930, the difference between the market prices of 48 square sheeting and 40 square sheeting was so dis-

proportionate that the loss on the first was calculated by Mr. H. P. Kendall¹ to be 2.39 cents per pound as compared with a loss on the second of 5.65 cents per pound. In November, 1928, the loss on the first was practically negligible, while the loss on the second was 4.85 cents per pound.

The implied inability to make speedy readjustments to market changes is not only due to the character of the individual mill's equipment, as we have indicated; it is also to be accounted for by the great number of mill units which are engaged in practically the same type of operation without being conversant with each other's plans and rates of output. The average mill man, who is engaged in the manufacture of a particular cloth construction, has no means of knowing the extent of his competitors' activities except insofar as they are revealed to him indirectly by the action of the general market.

As we have already pointed out, many of the weaving mills purchase their necessary yarns, and the majority of them purchase a portion of the yarns which they require. Yarn purchases are very rarely made directly from the spinning mills.

Direct buying from spinners is impracticable owing to the many small units whose buying and selling is so irregular in quantity and quality. No

¹ *The Textile World*, Feb. 1, 1930.

spinning mill could safely rely upon any given group of cloth mills as an outlet for its product, since the latter might at any time and with but small warning be forced either to curtail operations or to change the character of its yarn requirements. Likewise no weaving mill could afford to be in a position which would prevent its shopping around, so to speak, and so gain the full benefit of competitive operations among the yarn mills.

The present structure of the industry therefore compels the maintenance of a yarn market in which a highly specialized and independent group, yarn merchants and brokers, serve as intermediaries between spinners and weavers.

Thereby it becomes possible for buyers of yarns with a minimum of effort to place orders for yarn in any size, quality or quantity either for immediate delivery or for delivery as desired within a period of months stipulated in the contract. By the same token the makers of yarns find in such a market a ready outlet for casual surpluses or a means of acquiring orders as a basis for future operations.

The yarn market provides for everybody the additional benefit of rendering visible and open the prevailing price quotations, so that no buyer or seller need feel that he is at a disadvantage as compared with his competitors in the prices which

he has paid for his materials or received for his products. In short everybody has access to even terms, facilities and prices.

Such a description carries the implication that the yarn market is a device which assures easy and constant equilibrium of the forces of supply and demand and in consequence a perfect and immediate balance between actual production and consumption of yarns to the mutual profit of all concerned.

But this is far from being the case. One might argue with equal logic that a well laid out battle field which provided all facilities for even combat was an institution which assured an equitable disposition of disputes between all combatants. The figure is not far fetched. If there is difficulty in recognizing its pertinence it is because the combatants in the yarn markets never know exactly whom they are fighting and upon receiving a fatal thrust never know who delivered it. And in justice to those who delivered it, it is but fair to add that they didn't mean to be at all personal in the matter.

The combatants in the yarn market consist not only of weavers, spinners, knitters and mercerizers, but in addition dealers of various types and other speculators. I have used the word "other" advisedly, since practically no participant in the

yarn market is free of speculative interest. Knitters and weavers will enlarge their orders for yarn, perhaps doubling or trebling their commitments to purchase, when the only incentive is a prospective rise in the price of raw cotton. Dealers and outside speculators will pursue the same policy in quest of those profits which spring from price appreciation. The effect is to stimulate greater mill activity and so increase greatly the yarn supply when the only ultimate effect of rising cotton prices is to force a shortage in the output and consumption of yarns.

When the price of cotton seems headed downward the yarn market becomes unduly stagnant, weavers and knitters placing orders only for current needs. The depression is intensified by the action of some dealers in selling "short," or "bucketing" buying orders,—the first creating the false appearance of enlarged offerings, and the second making the yarn demand seem smaller to the mills than it really is. Whatever be the general trend, it is always magnified to the point of unreasonableness by the violent attempts of all parties to gain a speculative profit from the movement. Thus the great basic problem of the yarn market is the problem of distinguishing between illusion and reality.

The better element in the trade does not look with favor upon speculative participation by those who are also dealers, and vigorous efforts have been made to eradicate it through urging the acceptance generally of a code of trade practices. This code promulgated by the Cotton Textile Institute in 1927 aims at preventing speculative dealers from selling short and thereby depressing prices "below the spinner's basis." It also strives to prevent dealer accumulation of stock, since large holdings of goods in dealers' warehouses on any other than a consignment basis serve to confuse greatly the true relationship between the current production rate and the basic consumption requirements, particularly since the volume of such holdings reflects scarcely more than response to speculative sentiment.

However, a basic weakness in the market which no code can alleviate, is that the real price makers in a time of depression are the marginal or weakest sellers and the strongest buyers. When it is generally known that producing units are hard pressed financially and that an appreciable percentage of them are prepared to accept business at a cost or below cost basis in order to avoid the worse alternative of insolvency or complete shut-down, buyers find it comparatively easy to shop around in the open market until dealers represent-

ing such units are discovered and induced to accept the minimum prices. Such prices at once through their open character become the prevailing prices and so serve as a maelstrom to engulf the entire industry weak and strong alike.

Just as the yarn market in the performance of its necessary functions contributes also to misunderstanding and confusion in the relationships between spinners and weavers, so does the cloth market confound those whom it also serves. Transactions in this market are carried out for the most part through the agency of commission merchants and brokers as in the yarn market. The principal seat of the cloth market is Worth Street, New York City. To this center of trade come a great array of buyers representing converters, wholesalers, garment manufacturers, department stores, retail chains, buying syndicates and industrial consumers to view the offerings of the cloth mills and converters. (Converters are both buyers and sellers: buyers of unfinished or "grey" goods, and sellers of finished goods.)

The importance of the converter as a specialist is due to the inability of a majority of the cloth mills to "style" and finish their products. The average mill does not have the quantity and variety of output, or the necessary capital, to justify the employment of designers and the operation of

the expensive machinery necessary for the dyeing, bleaching, printing, napping and other processes incidental to the proper finishing of fabrics. Hence its products are as a rule sold in the "grey," and so provide the raw material for the converter.

The converter rarely owns or operates plants. He merely purchases goods in the grey or in a semi-finished state, determines the style characteristics to be imparted to them, and has the actual processing done by another group of specialists called the finishers who are paid for their work at so much per yard. He is the individual who anticipates changing fashions and whose major responsibility lies in visioning the immediate future trend of fashion. At stated intervals he submits his designs or patterns to the buyers of finished goods and solicits orders. From the buying responses which he receives from his first showings he estimates the probable requirements of the trade for the approaching season and is then in position to close contracts with mills for his supplies of basic fabrics. These are purchased outright and then shipped direct to the finishers, who impart design and finish to the goods in accordance with the converter's specifications.

Although this arrangement is one well adapted to provide a high degree of technical excellence, the process is very poorly adapted to meet busi-

ness or economic contingencies. The position of the converter is a perilous one. If he buys his fabric materials from the mills in advance of the orders which he has received for finished goods, he assumes a speculative risk incident to fluctuations in the price of cotton; if he ventures to have his basic materials finished in advance of buying orders, his position becomes still more hazardous from the possibility of style changes. On the other hand if he delays all contracts until receipt of orders, he restricts mills and finishers to excessively limited periods of activity. Thus as the converters succeed more and more in their self protection they do so at the expense of mills and finishers.

As an individual the converter cannot be blamed for a policy of caution. Sound management principles would seem to dictate it. Yet by such a policy the mills are thrown into a position to which they cannot adapt themselves regardless of the efficiency of their management. Such relationships to the various units may be sound from the standpoint of the individual, but entirely vicious in their effects upon the group as a whole.

Let us now turn our attention back again to the commission merchant. An individual merchant usually serves as selling agent for a number of mills. The larger merchants may carry as many as 50 or 75 selling accounts. It is not unusual for

competing mills to have the same selling agent. The commission merchant, as selling agent, is a trader rather than a manufacturer. His compensation is in the form of a percentage of his sales. Hence from his point of view price is not so important as volume. A fluctuation of one cent a yard, which may mean the difference between profit and loss for the mill, is a matter of relative indifference to the merchant. He, of course, dislikes a price situation which is unfavorable to the mills, but since the competitive situation makes him as an individual helpless in the control of prices, his success as a merchant must come about through his ability to "move the goods." If he chose a different policy and attempted to hold out for better prices, he would quickly lose both buying and selling customers and suffer a speedy disintegration of his business. His only choice is to go with the market and become an indistinguishable part of the daily whirligig.

It is thus clear that at a time when the tendency of the industry as a whole is toward overproduction the commission form of selling serves to intensify the condition of depressed prices.

This outcome is made all the more certain by the prevailing practice of credit advances to mills by commission merchants. Such credit advances are based on sales already made or upon

goods in stock, and are practically certain to put the mill sooner or later in a position where goods must be sold regardless of price in order to square accounts with the commission merchant. It frequently happens that such loans cannot be liquidated by current collections and sales of goods in stock, in which case the mill has to be taken over by the merchant. Where this occurs the mill is usually continued in operation, but with no obligation to stockholders and with no purpose of providing a profit from its operations. The commission merchant is satisfied with his usual commission on sales, provided he breaks even in the operating end of the arrangement. Mills of this type, of course, serve to create a competitive situation which is greatly to the disadvantage of mills which are operated to provide a profit for stockholders.

No true appreciation of the helplessness of the mills in a situation such as we have described can be gained without a knowledge of the buyers who enter the primary markets. We have already noted the unique and powerful position occupied by the converter. Scarcely less powerful are the other takers of cotton goods. As a group they may be regarded as being financially stronger than the mills and more familiar with market conditions. The smaller retail stores of the country

for the most part pool their purchases through the device of so-called buying syndicates. In many cases the department stores have added to their strength as independent buyers by using the same method. The buying advantage possessed by the chain stores and mail order houses is well known. Industrial consumers, such as automobile and furniture manufacturers and those who purchase cotton goods in great quantity for containers such as flour bags, cement bags, tobacco pouches, also occupy a strategic position because of the size of the orders which they can place. The garment manufacturers follow assiduously the bargain seeking method in making their purchases and from the large size of their takings are in a position to play the commission merchants against each other to the end of minimum prices. From a method of distribution of this character no one can expect a scientific or consistent relationship between sales prices and manufacturing costs so long as no concerted effort is made for the regulation of production volume.

The accompanying diagram² indicates the complexity of the industry's distributive mechanism all the way from the spinning mills to the final retailer. The relative importance of each of the distributing channels has been measured by the

² See above, p. 51.

Harvard Bureau of Business Research and published in their Bulletin No. 56, *Distribution of Textiles*. The survey is based on the aggregate of "billings" as shown by the books of mills and converters. This method fails to distinguish between sales made through a commission merchant and those made by the mill from its own office or controlled agent. This is an extremely important omission, as one of the main problems of the industry arises from its commission method of marketing, but the Bureau was unable to procure the desired data.

Bearing in mind this defect of the report, the reader will find very instructive the following summary of the Bureau's findings, as of the year 1924:

1. Of the total billings reported of yarn-dyed fabrics and grey goods, approximately one-third was to converters, 10 per cent to cutters-up, 14 per cent to wholesalers, 5 per cent for export, and 1 per cent to retailers. The remaining one-fourth of the total goods sold by cotton manufacturers was in the form of finished fabrics converted by cotton manufacturers for their own account.

2. Of the billings of cloth converted by cotton manufacturers, 29 per cent was to cutters-up, 9 per cent to other manufacturers, 46 per cent to

wholesalers, 4 per cent to retailers, 5 per cent for export, and 7 per cent to hospitals and unclassified types of customers.

3. Of billings reported by cotton converters and finishers, 28 per cent was to cutters-up, 41 per cent to other manufacturers, 24 per cent to wholesalers, 6 per cent to retailers, and 1 per cent for export.

4. Thus the total estimated market for cotton piece goods in 1924 was made up as follows: Approximately 30 per cent was sold for industrial purposes; 26 per cent was used by cutters-up; 36 per cent was sold as piece goods by retailers; 6 per cent was exported, and 2 per cent was in the form of unclassified institutional sales.

5. Eighty-nine per cent of the piece goods purchased by retailers was bought from wholesalers, 8 per cent was bought directly from converters and cotton manufacturers converting on own account, and 3 per cent directly from cotton manufacturers in the form of yarn-dyed fabrics and grey goods.

When the Harvard survey was made, certain tendencies, which have since become stronger, were already under way in the direction of marketing reform, such as the declining importance of the wholesaler, and the greater amount of direct buying from mills and converters by cutters-up and

retailers. A similar survey in 1928 would show an enlargement of such direct buying. We shall now inquire into the reasons for these and other changes.

Reverting to the diagram showing the industry's functional organization: if we consider separately the various groups of spinners, weavers, finishers, converters, commission men, brokers, wholesalers and cutters, the position of each group seems theoretically impregnable. Each has a definite and necessary process to perform; as specialists they perform those tasks in conformity with standards which are set by the industry as a whole. Moreover, the fact that the industry's functional organization is an evolutionary product with a century of shaping and testing behind it, supports the presumption that it is not the origin of the industry's misfortunes. The recurring periods of chaos since 1920, marked as they have been by recrimination and hostility among the various groups, have not sprung from technical or administrative incompetence of the specialists within the area of their prescribed functions. The difficulty clearly lies in the fact that each group since the war period has been forced to cope with hazards which do not lie within its province or its ability to combat. Here it is necessary to make a nice distinction between hazards which are prop-

erly to be absorbed by a complete sequence of groups from spinners to retailers, and the hazards which are the peculiar problems of individual specialists.

Those of the former type have been greatly enlarged since the war by the wider range of fluctuation in the price and supply of raw cotton, by rapid and sweeping changes in consumption behavior relative to finished goods, and by changes in merchandising practices. These disturbing influences so completely foreign to the traditional experience of the industry, rushing in as they do from both ends of the business, have found the various factors in the industry wholly unable to present a unified front. The result is that for each unit the possible loss or gain from purely chance happenings far exceeds the possible loss or gain from routine performance. The operations of each group and of each individual in the group have become, therefore, highly speculative. It is a situation where functional coöperation has been sacrificed largely to sharp trading, thus producing not only a general attitude of distrust, but also genuine economic conflict.

III

THE INDUSTRY AND THE COTTON MARKET

Of the various forces which have proved too powerful for the textile industry with its quaint structure to combat, the most violent one is the fluctuating character of the price and supply of raw cotton. A variation in production of as much as 30 per cent from one year to another is not unusual. Since 1920 the American cotton crop has ranged from 8,000,000 bales in 1921 to nearly 18,000,000 bales in 1926. From the 1926 peak, production dropped in 1927 to less than 13,000,000 bales, expanded in 1928 to 14,300,000 bales, and in 1929 reached 15,000,000 bales.

The effect of this irregular production behavior is accentuated by equally violent irregularities in cotton exports. Ordinarily, we depend upon foreign countries to take about 60 per cent of the cotton harvest. From year to year this average is widely departed from. For example, in 1925 exports were less than 50 per cent production, whereas in 1927 exports were approximately 70 per cent of the year's production. Much of the unevenness of export operations has been due to unsettled political and economic conditions in Eu-

rope and in the Orient, which have served to affect prices quite as much as have the conditions of supply.

From the mill's viewpoint these price fluctuations are of serious import since the cost of raw cotton is from one-third to two-thirds of total mill costs, depending upon the fineness of the goods being produced. In the manufacture of ducks, drills and heavy sheetings, the cost distribution has been estimated to be typically as follows:

Overhead, supplies, etc.....	13.34%
Labor	20.00%
Cotton	66.66%

For mills making medium count goods cotton costs approximate one-half of the total costs. It is obvious that profitable mill operations are conditioned upon changing the prices of finished goods in prompt conformity to changes in the price of raw cotton. But this task is far from being as simple as it might appear. It is characteristic of the cotton market not only to exhibit a wide range of prices from year to year, but highly sensitive fluctuations from day to day and week to week. It is not uncommon for cotton prices to fluctuate as much as two cents per pound within a twenty-four-hour period.

This extreme sensitivity of raw cotton prices prevents exact responses in the goods market, since from the standpoint of the buyer the maintenance of a fixed margin of profit for the mills is a matter of no concern. In other words, the buyers take into consideration not only the price of cotton at the moment of purchase, but also the supply of goods already manufactured and the probable behavior of cotton prices within the period of the next three or four months.

There is indeed a theoretical norm between the price of each standard type of cloth construction and the price of raw cotton, but the maintenance of this norm cannot be achieved unless the mills regulate the output of each type of construction and so keep themselves in a position to exact a fair manufacturer's margin. Hence, if the price of cotton goes up there is no certainty that cloth prices will move in entire sympathy, unless the mills are willing to reduce output in conformity with the anticipated scarcity of cotton. If cotton moves downward in price, the manufacturer's margin ordinarily declines with even greater rapidity, since under such conditions buyers are disposed to stand aside and wait for the downward movement to be completed before making their commitments. This forces the mills into the necessity of manu-

facturing to stock and so accumulating a surplus which will eventually assure sales at distress prices. For example, in June, 1930, raw cotton was selling around thirteen cents a pound after having earlier in the year sold as high as seventeen cents. At the moment, the prevailing expectation was for still lower prices of raw cotton. In consequence the mills were forced to accept prices for many standard constructions which ordinarily would reflect ten-cent cotton. The hand to mouth requirements of buyers were being met from the over-accumulations of goods on hand and even after six weeks of drastic production curtailment the goods market was showing no inclination to recover.

Adjustment of mill operations to rising cotton prices should be logically as follows: After the price moves up in response to the prospective shortage in the supply of raw cotton, the mills should raise cloth prices proportionately. However, as this is done output should be reduced to conform to the scarcity of the raw material. In this way consumption can be forced to contract without imposing upon the mills smaller profits as a result of smaller volume.

But in actual practice the sequence of events is quite different. If there is a marked shortage of cotton and the price goes up with every expec-

tation of high prices for some time to come, cloth prices will rise, but the mills instead of reducing production to conform to the raw material situation will scramble madly for whatever cotton is available and enlarge the output of cloth. For a limited time such a program is given vigorous support by all divisions of the industry. Converters, jobbers, garment manufacturers, industrial consumers, speculators, and large buyers of every type and description will rush to place their orders for goods before the price advances reach their maximum. This enlarged buying has all the appearance of a fundamental increase in the demand for cotton goods and the mills interpret it accordingly. In actuality, the heavy buying, being purely speculative in character, merely results in overloaded warehouses and shelves of the various divisions of the trade. Soon a point is reached where the hugeness of inventories commands attention and at once engenders a reverse price movement. All groups must then weather a period in which surplus stocks must be worked off, usually with losses which more than offset the profits of the preceding period.

If the prospect is for an exceptionally large supply of cotton relative to the past year's supply, the expected decline in raw cotton prices is certain to affect all manufacturing groups unfavor-

ably. Buyers of every class, converters, jobbers, cutters-up, and industrial consumers depart from their accustomed practice of placing orders for goods at a stipulated time in advance of their requirements. If the custom has been to place orders sixty days in advance of desired deliveries, this time interval is reduced by an appreciable margin, and the further precaution is taken to buy only in the smallest possible lots to meet current requirements.

Such action in an individualistic, competitive economy is inevitable, and from the standpoint of the individual enterprise is entirely praiseworthy. No criticism can be made of any management which proceeds cautiously in a time of price decline in order to escape the heavy losses incident to inventory depreciation. But however commendable the behavior from the buyers' point of view, it is disastrous for the mills.

For the latter the transition from a state of relatively large to exceptionally small stocks throughout the industry means nothing less than a compulsory choice between curtailed production and a policy of manufacturing to stock. The former alternative is one which Southern mills in particular accept reluctantly. For the most part they are located in communities which depend al-

most entirely upon the mills for their economic support. A mill shut-down means nothing less than complete business paralysis for the entire community. Alternative occupations for employees are not available, neither are there alternative customers for tradesmen and truck growers.

Shutting down the mills is therefore equivalent to releasing by the wholesale the wolves of starvation.

Everywhere it is recognized that production curtailment does not relieve management of the heavy burden of overhead cost and of machinery upkeep. It means too almost invariably the disintegration of labor personnel and the demoralization and distress of those who are faithful. But outside the bituminous coal fields of West Virginia and Kentucky there will probably be found no localities where every fibre of community life is so dependent upon a single industry as is the case throughout the greater part of the Southern textile area. The general failure of the mills to curtail readily therefore upon the first appearance of market weakness is to be viewed not without a certain degree of sympathy.

The reader must remember that we are not here concerned with the problem of chronic over-production as a corollary of physical over-expansion

of the industry. Our immediate concern is with those recurrent maladjustments which arise from inability to conform with the logical implications of the raw cotton market.

If the mills, in their attempt to regularize production and provide steady employment accept the second alternative mentioned above: that is, manufacture to stock on occasions of weakness in the cloth market, they will find that in the efforts to escape Scylla they have only succeeded in falling into the hands of Charybdis. Such action merely encourages buyers to an attitude of greater persistence and determination in withholding purchases. If all divisions of the trade know that mills generally are manufacturing to stock, a waiting attitude no longer carries with it any degree of danger. This in itself is enough to assure acute market weakness.

An additional unfavorable outcome from a policy of manufacturing to stock arises from the heavy financial burden which such a policy entails. A large percentage of the mills are barely able to command requisite credit for operations which involve the normal rate of turnover. A slowing down of sales without curtailed production, involving as it does the usual expenditures without the usual income presses the mills into the

necessity of borrowing from the commission merchants on the security of the goods produced, or else discounting short time paper with the textile factors after endorsement by the merchants. In either case the loan period is short and the number of renewals strictly limited. Unless the period of weak markets proves to be short, many mills find themselves eventually so heavily loaded with maturing obligations that a forced sale of the excess inventories with attendant heavy losses is inevitable. It is not infrequent that commission merchants under such circumstances quietly "take over" the embarrassed units to avoid the unfavorable effect of open bankruptcy.

Even where the financial strength of a mill is equal to the extra demands imposed by prolonged manufacture to stock, the risk from heavy losses through inventory depreciation cannot be entirely obviated. Over weak and strong alike this contingency hangs like a sword of Damocles, and is virtually certain to fall if a consistent decline occurs in the price of raw cotton. The more persistent the majority of mills are in their efforts to outlast the period of depression by courageous continuance of operations, the more burdensome will stocks become, and the more certain the ultimate collapse of goods prices to a level which will com-

pletely obliterate the manufacturer's margin.

Thus we are forced to the curious conclusion that in the cotton textile industry a prospective scarcity of raw cotton with rising prices leads to over-production through the desire of the mills to make the most of the profit possibilities; whereas a prospective excess of raw cotton with falling prices leads likewise to over-production through the desire to avoid losses. The former is voluntary, the latter a forced eventuality. In the first case the action of the industry is a hair trigger action, eager and buoyant; in the second it is a long drawn out struggle, grim and tenacious.

It is a behavior which is not wholly unique as to type. It is found in other industries, but with varying degrees of intensity. Its importance in a particular industry depends upon the frequency and amplitude with which the raw material prices fluctuate. It happens that fluctuations in the price of raw cotton from the standpoint of consistency of violence surpass those of any other major raw material. Particularly has this been true since the war.

In the period from 1905 to 1913, inclusive, the mean deviation or spread of monthly cotton prices from the average of the period was only about 10 per cent. The maximum deviation for the entire period was only about 20 per cent, and this per-

centage was approached in two years only out of the nine under observation. (See Fig. VII.)

In we take the nine-year period 1920-28, the average monthly deviation from the average of the period approximates 25 per cent. The maximum deviation exceeds 100 per cent. In only one year of the nine is there a price behavior which fails to show a maximum deviation of at least 20 per cent from the long time average. Even more striking is the fact that every year except one, 1925, in the series shows a maximum deviation of at least 25 per cent from its own average.

This comparison proves beyond question that the hazards with which the industry has to deal as a result of the gyrations of its raw material are easily twice as great as they were prior to 1913. It is not surprising therefore that the difficulty of arriving at proportionate readjustments in production rates and consumer takings of manufactured goods has seemed insurmountable, and that operations of all groups within the industry have become highly speculative in character.

Possibilities of profit or loss from cotton fluctuations completely overshadow in importance considerations of technical efficiency. Too frequently successful mill management is conditioned more upon shrewd cotton buying than upon efficient and economical cotton manufacture. When the

SPOT COTTON PRICES IN NEW ORLEANS
(MONTHLY AVERAGES BY CROP YEARS, 1905-1930)

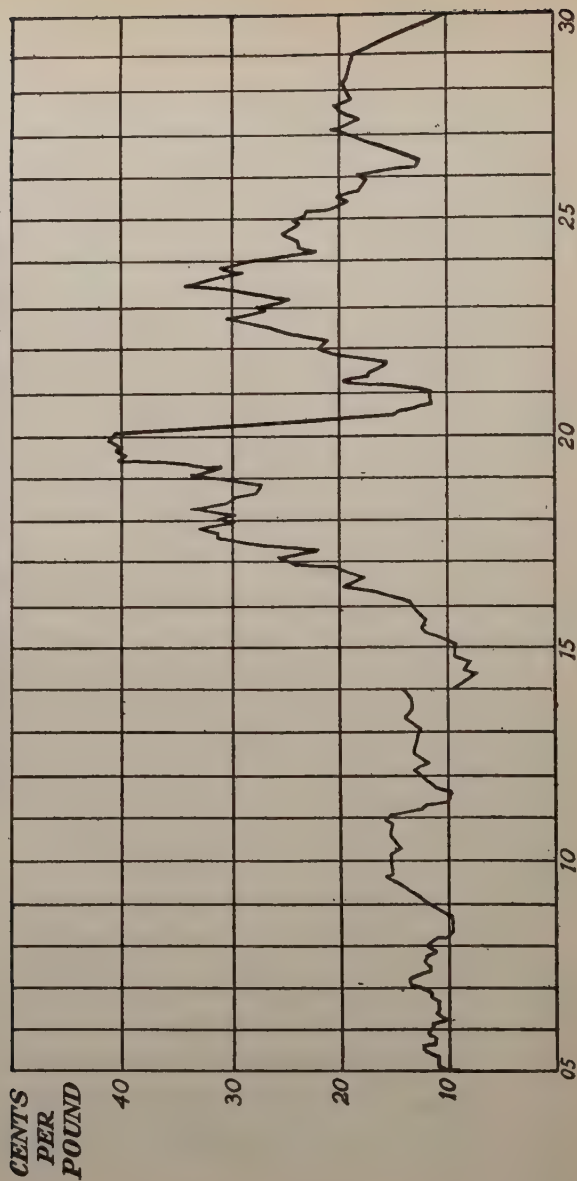


FIGURE VII

cotton buying does not prove to be shrewd, the results are tragic, regardless of the competence of management in other respects.

Against these risks the industry has no adequate defense. For the majority of units, the avoidance of risk consists mainly in attempts to pass it on to the other fellow.

The best and most valid defensive mechanism against the hazards incident to cotton fluctuations is the device known as hedging. Yet this type of protection is far from complete, and the majority of mills do not consistently make use of it.

The theory of protection involved in hedging is based on the assumption that cloth prices from day to day follow the spot cotton market. Hence the mill which is manufacturing goods to stock presumably may protect itself from a decline in cotton prices by maintaining a short position in the futures market until the goods are sold. It is assumed that through this arrangement the profits made from the short sale in the event of a price decline in raw cotton will offset the losses suffered from the decline in the price of cloth. Per contra, if the price of cotton should go up the loss resulting from the short sale in cotton would be offset by the additional profits accruing from the higher prices at which the goods would be sold.

Hedging is not only supposed to take care of the hazards involved in the manufacture of goods when there is no immediate market for them, it is likewise supposed to provide protection in those cases where the mill accepts orders for goods in advance of their manufacture. The immediate purchase of the right amount of actual cotton of the desired grade and character may not be possible. Yet postponement of such purchase induces a risk from the possibility of an increase in the price of the cotton which would wipe out all profits from the contract. To obviate such a contingency, the mill presumably should place itself in a "long" position in the cotton futures market to the extent of its cotton requirements, thereby assuring itself of a profit in the raw staple in the event that a loss has to be taken in the sale of the goods.

Theoretically therefore it is always possible for a mill to balance its cloth position, whether it be one of goods sales without cotton or goods stocks without sales, by the assumption of a compensatory position in the cotton futures market. If carried out with exactness and consistency, hedging presumably deletes both the risk of speculative loss and the chance for speculative profits, reducing the problem of mill compensation to the comparatively simple one of exacting a price for cloth which covers the cost of technical manufacturing

operations. Before noting the technical difficulties which cause hedging practice to fall short of hedging theory, let us advert briefly to the mill man's actual procedure in supplying himself with his raw material.

He does not look to the organized cotton exchanges to supply his cotton, since all transactions on the exchanges are based on a single basic grade of cotton, upland "middling." Moreover the limits of tolerance are very broad on the cotton which constitutes valid delivery on an exchange contract. Even if a mill's major requirements could be satisfied by the single "middling" classification, it is doubtful if it could depend solely on such deliveries because of the wide variation in the "character" of the staple which the tolerance of the market would permit.

Hence for actual purchases mills must make use of the cotton merchants and buy their staple on the basis of samples offered for inspection. Practically all mills require several different grades of cotton to provide the desired variations in count and quality of yarns. So fine are the distinctions drawn between the different qualities of cotton that not infrequently mills find it necessary to blend two or more different grades in varying proportions. Because of the extreme importance of acquiring just the desired grades and qualities,

mills make it a practice early in the cotton year to enter into agreements with responsible cotton merchants for a large portion of the year's supply.

The cotton is not bought at a fixed price, but at a price to be determined later by the action of the market at such time as the buyer wishes to exercise his option of "fixing" the price. The arrangement is ordinarily referred to as "buying on call." It enables the buyer to ask for delivery of the cotton in such quantities and at such times as meets his own wishes, but permits him to delay indefinitely the process of "fixing" the price. Since the merchant may be called on to deliver the cotton before he knows what price he is to get for it, his risk is so great as to require hedging on his part. Thus the "call" contract shifts the hedging operation to the merchant rather than to the mill. This he performs by selling "short" an equivalent amount of cotton in the futures market.

Theoretically the mill should fix the price of the cotton which it has purchased on call as rapidly as it receives orders for the manufactured product, in this manner keeping raw materials prices in line with goods prices. This is done by purchasing for the account of the cotton merchant a futures contract which offsets the merchant's previously placed short sale.

Of course many mills do not use consistently the "call" contract; preferring to buy cotton at a fixed price and then if they so desire, placing off-setting short sales in the futures market, which are covered as the cotton is consumed. But fundamentally there is no difference between this form of hedging protection and the call method. The latter causes the merchant to do the short selling, and the former the mill.

Having sketched the procedure involved in the hedging process which to the layman appears as an ideal protective device, we shall now point out those deficiencies which render it so inadequate in the elimination of risk. These deficiencies which are inherent in the device, and in practice insurmountable, are three in number: (1) The hedging contract only offers protection against fluctuations in the price of the standard basic grade; (2) The spread or differential between spot cotton prices and futures prices is not a constant, but is subject to wide and erratic variations; (3) The spread or differential between spot cotton prices and cloth prices is likewise subject to frequent and drastic maladjustments.

When the mill places orders with the cotton merchant for its stipulated grades of cotton, it does not agree upon a fixed price for each grade,

but does agree upon a fixed differential between each grade and the basic grade. Thus if the grades desired are superior to the basic grade, a premium is agreed upon which is to be added to the basic grade price which the mill finally "fixes" in the open market. In the case of sub-standard grades, a discount is agreed upon to be subtracted from the basic price. In trade parlance the expressions "on" and "off" are used to signify the amount of premium or discount. Thus, if "strict middling" is quoted by the cotton merchants at 60 points "on," this means that upon the termination of the transaction the mill will pay to the merchant the price per pound for the standard market grade plus \$3.00 per bale as premium.

A differential thus fixed in the contract obviously provides protection only when it proves to be in substantial accordance with the subsequent behavior of the market. The accompanying table (Fig. VIII) indicates the undependable character of this behavior. The wide variations in the spread from the basic grade cannot be hedged against, and are quite sufficient to precipitate heavy losses or unexpected speculative profits. This type of risk is known as "basis" risk.

In the season 1927-28, to mention one example, the spread between the basic grade and low middling varied by as much as 2.14 cents per pound,

"BASIS" AND PRICE RISKS, 1923-1928

Price risk is shown by the spread between the high and low reached in each season between 1923 and 1928 by the average price in ten spot markets. "Basis" risk is shown by the spread between high and low reached in each season by the average "basis," i. e., the difference in points between the average spot price and the nearest basing month on the New York Cotton Exchange. The futures price printed is the high and low reached by the nearest basing month during each season on the New York Cotton Exchange.

	—1923 - 1924—		—1924 - 1925—		—1925 - 1926—		—1926 - 1927—		—1927 - 1928—	
	High	Low	High	Low	High	Low	High	Low	High	Low
Futures.....	37.10	22.64	14.46	28.30	22.18	6.12	24.12	16.22	7.90	18.74
Good Middling—										
Spot.....	37.01	23.51	13.50	30.44	22.19	8.25	24.93	17.69	7.14	18.90
Basis.....	5.55	— .22	5.77	2.14	— .70	2.74	1.47	— .71	2.18	1.24
Strict Middling—										
Spot.....	36.54	23.29	13.25	30.05	21.94	8.11	24.72	17.51	7.21	18.64
Basis.....	5.11	— .69	5.80	1.75	— .93	2.68	1.29	— .93	2.22	1.05
Middling—										
Spot.....	35.79	23.04	12.75	29.30	21.66	7.64	24.38	17.07	7.31	18.04
Basis.....	4.31	— 1.44	5.75	1.00	— 1.27	2.27	.85	— .96	1.81	.62
Strict Low Middling—										
Spot.....	34.41	22.64	11.77	27.87	20.71	7.16	23.81	15.79	8.02	17.61
Basis.....	2.96	— 2.77	5.73	.31	— 2.23	2.54	— .31	— 2.17	1.86	— .68
Low Middling—										
Spot.....	33.04	22.14	10.99	26.61	19.53	7.03	23.10	13.69	9.41	15.94
Basis.....	1.11	— 4.07	5.18	— .52	— 3.41	2.89	— 1.02	— 4.03	3.01	— 2.24

Source: Cox, *Hedging of Cotton*. A study published by the *New York Journal of Commerce*, 1930.

FIGURE VIII

which is the measure of the "basis risk." In 1925-26 the basis risk on this grade was 3.01 cents per pound, in 1923-24 it was 5.18 cents per pound.

As to the comparative sizes of the fluctuations in "basis" and the fluctuations in the total price, which measure basis risk and price risk respectively, there is no normal. In 1923-24 "basis" risk for the various grades ranged from about two-fifths to about one-half of price risk. In 1924-25 and 1925-26 basis risk was from one-third to one-fourth as large as price risk. In 1926-27 basis risk was one-fourth to one-fifth as large as price risk. In 1927-28 there was a wider variation between the grades, basis risk ranging from one-third to one-eighth of price risk.

These comparisons indicate that the individual's risk when hedged has been from one-eighth to two-thirds as great as it would have been had he not been hedged. In other words, hedging is of substantial value, but it falls short of destroying all the risk of price fluctuations.

Thus the beautiful simplicity of the usual hedging theory, which represents spot cotton and cotton futures as moving up and down together, is rudely shattered by the actual figures, which show that there is really no one cotton market, the field being occupied by a large number of markets for different kinds of cotton, each of

which is inclined to show a disconcerting independence in its price movements.

A somewhat different though none the less ubiquitous and malevolent type of risk is that contained in the diverse behavior of the futures market and the spot cotton market. A perfect hedge must be of dual character—it must protect from the contingency of diverse movements of particular grades of cotton as just described, and it must likewise protect from the consequences of contradictory movements in the futures market and the spot cotton market of the same basic grade of cotton. But in actual practice no greater success can be attained in procuring the latter type of protection than in the former. If all grades of cotton fluctuated together maintaining constant percentual differences in price, there would still be the frequent presence of disparity between a futures contract and spot prices.

It is true that this type of price inconsistency is of brief duration, is due chiefly to temporary technical conditions that often savor of manipulation, but it is none the less important from the standpoint of mill profits. The most glaring example in recent years occurred in 1923-24 when a "squeeze" in July contracts carried the futures price more than 500 points over the prevailing October quotations. At that time a hedging com-

mitment made by a mill to cover sales of goods not yet manufactured would have invoked nothing less than disaster.

Mill management must face a third type of risk in the failure of the general level of cloth prices or yarn prices, as the case may be, to maintain a constant differential from spot cotton prices. It is entirely possible that success in counteracting the other two types of risk by shrewd operations in the cotton market would be attended by utter helplessness to maintain a profitable margin between cloth prices and cotton prices. In recent years this is the type which is primarily responsible for the practically universal distress under which the industry is laboring. It is not due to the vagaries of the cotton market, but is traceable to the doors of the mills themselves. It is one of the manifestations of over-production which is occasioning ever increasing apprehension on the part of mill men and the most powerful stimulus to serious, concerted action that has made its appearance in many years.

The difference between the selling price per pound of cloth and the cost per pound of raw cotton calculated on the basis of spot cotton prices is known as the manufacturer's margin. From this margin must come all operating costs and whatever profit the mill makes from its manufacturing operations. Obviously the margin varies with the

different types of cloth construction due to normal differences in operating costs to be covered. But frequently it disregards these differences and at any given time is likely to be adequate for certain constructions or types of cloth and wholly inadequate for others.

*MARGIN BETWEEN MARKET PRICE PER POUND
OF 64/60's AND SPOT COTTON

YEAR	HIGH	LOW	AVERAGE	SPREAD
	PER POUND	PER POUND	PER POUND	PER POUND
1921	31.25	22.00	26.00	9.05
1922	28.75	20.60	24.75	8.15
1923	31.80	19.50	25.50	11.80
1924	24.80	15.50	19.80	9.30
1925	29.60	24.70	27.80	4.90
1926	26.10	19.50	22.90	6.60
1927	26.80	21.55	23.25	5.25
1928	23.40	19.00	21.00	4.40
1929	24.16	18.61	20.96	5.55

* Arrived at by deducting the price of spot cotton from the price per pound of 64/60's. This represents a very rough approximation of gross yield to the mills to cover the service of manufacturing and selling.

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quate for others. If individual differences be disregarded and the manufacturer's margin be viewed as the difference between the average costs of all cloth types and the price of cotton, the fluctuations will still be extremely pronounced.

As an example of the wide range of fluctuation in an individual case, the mill margin for a standard quality of print cloth (See table above)

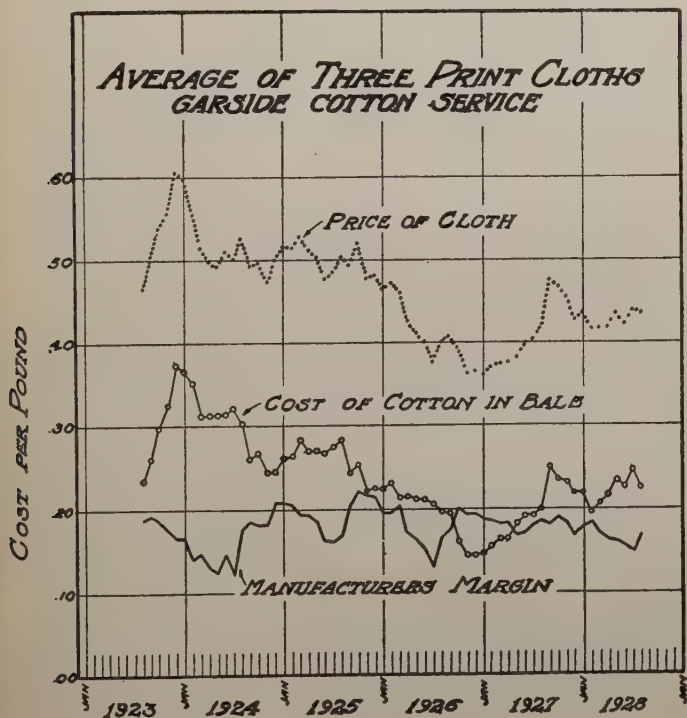
varied in 1928 from 23.40 to 19.00 cents a pound, and in 1929 varied from 24.16 to 18.61 cents per pound. At the minimum figures, losses on this construction for the average producer were estimated to be approximately 4 cents per pound.

The pronounced change in manufacturer's margins which may take place from month to month is shown in the accompanying chart (Figure IX) in which are averaged the margins of three standard print cloth constructions. From January to July, 1926, the margin was reduced by over two-thirds, despite the substantial decline which took place in the cost of cotton. In the first half of 1928 a sharp reduction in the margin also occurred, yet on this occasion the trend of cotton prices was upward!

Whether we view the manufacturer's margin as of interest merely because of its fluctuating quality, or whether we view it in its more alarming aspect of a chronic downward tendency, the out-growing problems cannot be solved by any such device as hedging, nor is the individual mill unit able to escape the consequences by any independent action.

Except in the manufacture of certain specialties such as towels, denims, cordage, and hospital supplies the individual units in the industry are

too small to gain results by individualistic policies, however enlightened they may be. Production curtailment for the relief of a heavy market only serves to widen the opportunity of the competitor.



A shifting from one type of yarn or cloth construction to another is of advantage only for the short period required for an overwhelming number of others to shift. In spinning or gray goods

mills, operations are so standardized that differences in technical efficiency can affect profits but little. Exceptional shrewdness in cotton buying which is characterized as much by a studied avoidance of hedging as by its use may keep a mill in the profit column for an indefinite period, but no industry can be regarded as economically sound which is compelled to look for its profits from sources other than actual manufacturing operations.

The only procedure which the individual unit is at liberty to follow in view of the present sprawling and atomistic character of the industry is to run with the crowd. It is the better procedure merely because the only alternative is worse. By a majority of the industry's components it has been frankly chosen, and in our further analysis of the industry's reactions to the cotton market we shall therefore discuss the limitations which hamper the mills as a group in their reactions to the cotton market.

Should the mills as a group in order to evade the malevolent risks engendered in the cotton market adopt a policy of manufacturing goods only on order, the ultimate consequences would probably be worse than those now prevailing, so far as the industry as a whole is concerned. Such a

policy would mean merely passing the risk along to someone else—converters, jobbers and cutters-up. These groups obviously would decline to accept such risks in greater volume except on a price basis so low as to constitute additional insurance over and above that obtained by hedging. This alone would preclude any greater profitableness for the mills from such a policy.

Moreover the general adoption of such a policy would tend to make the industry more highly seasonal in character than at present. Converters, jobbers, cutters-up and other large buyers are naturally disposed on account of the swiftness and violence of cotton fluctuations as well as the vagaries of fashion, to postpone the placing of orders as long as possible in preparation for the business of a particular season, even when such postponement means the payment of higher prices. Should the mills conform in their production schedules to these seasonal delays of buyers, they would greatly accentuate the peaks and valleys which already characterize mill activity. A greater concentration of mill activity within those periods immediately preceding new seasonal requirements would mean a greater expansion of mill capacity in order to take care of the artificially enlarged peak loads, and the resultant periodic curtailments

would mean even more idleness of machinery than now prevails with a further intensification of the problems of wages and unemployment.

The proper economic goal of every industry where there is a high degree of mechanization is regularity and constancy of operations. They are prerequisite to the attainment of maximum manufacturing economy and essential in the maintenance of a proper ratio of overhead costs to value of output. Hence both business and social considerations are antagonistic to any program of reform in the textile industry which would procure adjustment to the forces of change by methods which are violent and sporadic.

The dilemma which the mills face is too fundamental for compromise. Either they must operate on orders with the result of a more intensified seasonalizing of the business and greater costs of operation; or else they must manufacture to stock for a large part of the time with the ever attending threat of losses from cotton price fluctuations and from the deterioration and obsolescence of goods.

How their choice of the latter alternative works out in practice is amply demonstrated by the events from August, 1926, to August, 1927. The former date marked the final phases of a prolonged decline in the price of cotton which had forced

upon the mills for some months a program of exceptionally drastic curtailment. But the long decline in the price of cotton had finally reached the point where even the most pessimistic were convinced it could go no further.

At 10 cents a pound, cotton was not only under the average costs of production, but was back to the levels of 1912, and lower by 50 per cent than the general level of prices as compared with the 1913 base. Cotton was so cheap that any further change of importance in its price would necessarily be upward.

This combination of circumstances had by the end of the year definitely produced a spirit of optimism in the industry. The mills expanded spindle activity, and accumulated heavy stocks of raw cotton. The increased activity of the mills, together with the extensive speculative buying of cotton by the public and by export interests, caused a rapid rise in the price of the staple. It is a matter of extreme interest that during the next five months a rise of 25 per cent in the price of raw cotton produced scarcely more than a "firming" of goods prices. Increased manufacturing activity, while aiding in the recovery of cotton prices, had effectually checked what should have been a proportionate rise in the price of goods. Yet the position of the mills was in general considered favor-

able because of the book profits that could be shown on account of the increased value of the large cotton inventories.

By June and July it was becoming evident that the 1927 cotton crop would fall considerably short of the 1926 bumper crop. Whereupon the prospect of a diminished cotton supply had the curious effect of greatly increased cotton consumption, so far as the mills were concerned. For the time being, mills were willing to manufacture to stock and converters were willing to buy goods in advance of requirements, as were jobbers, garment manufacturers and dealers generally. This tendency to accumulate manufactured stocks through all successive sections of the industry provided sufficient support to the goods markets to cause a rise in prices proportionate to the advance in the price of the staple.

By October the artificial elements in this prosperity had exhausted themselves. Stocks were uniformly large; orders and shipments began a rapid decline, and at the end of the year were far under the levels of the preceding year. Goods prices which had begun to decline in October, continued to fall for five months at a rate more rapid than the concurrent decline in the price of cotton. Since cotton constitutes about one-half the costs of

goods, the labor cost element remaining virtually a constant, a decline in goods prices which is proportionate to a decline in the price of the staple should be percentually only about one-half the latter. With this consideration in mind, we are justified in saying that that portion of goods value which is represented by cotton fell twice as rapidly as did cotton itself in the decline from October, 1927, to February, 1928. No such disproportionate behavior could possibly have occurred, in the absence of declining consumption, without a preceding period of over-production and over-stocking.

The illustration here given is typical of the industry's tendency to over-produce, although such a case is rare in the sense of its exceptional freedom from any other complicating influences. Taken in conjunction with other similar experiences, it seems to support the general conclusion that the production organization of the industry is such that it may produce for itself a temporary period of prosperity without any reference to changes in the consumption situation. The essentials seem to be merely (1) An abundant supply of raw cotton, the price of which appears to have struck bottom and is headed for subsequently higher levels; (2) A comparative short-

age of manufactured stocks in all branches of the industry—manufacturers, converters, wholesalers, and cutters-up.

Such a prosperity period will of course be short, unless the rise in the price of cotton which is its primary basis is given still another fillip by a relatively short crop the following year, as in 1927. In this case a prolongation of some months will be achieved.

But eventually, whatever be the behavior of cotton, the industry effectually chokes its own prosperity by over-production. The ease with which this can be achieved, and the motivation which brings it about has been explained in a preceding section.

Regardless of how clear the warning signals of over-production may be, the hundreds of small mills persist in full capacity operations as long as receipts equal expenses, or until the hazards of the market become so pronounced that financing of further production is impossible. This reluctance to abate production schedules until necessity compels has the result of exaggerating and prolonging a depression period when it occurs.

The problem of adjustment to the raw cotton situation was particularly difficult for the mills from the autumn of 1923 to the autumn of 1926. During this period of three years the price of

cotton was almost continually downward, moving with but slight and temporary interruptions from 35 cents a pound to 12 cents a pound. It is the general policy of the mills to begin making their staple accumulations in the autumn after the size of the crop is known, and in anticipation of the peak business of late winter and spring. After the peak of seasonal activity in March or April, mill stocks of raw cotton are allowed to deplete with great rapidity reaching a minimum in mid-summer. It so happened during the three-year period under review that such rallies as occurred in the price of cotton on its downward trend were coincident with the greatest mill accumulations of the staple. Hence for three years in succession the mills were handicapped by having to work off their maximum seasonal accumulations of cotton on a declining market. Perhaps this accounts in part for the reckless enthusiasm with which the mills expanded operations when finally they had the advantage of a rising cotton market in 1927.

So far, in our discussion of the relationship between mill activities and the raw cotton market, we have assumed that the latter was primarily causative in character and that the mills were free only to adopt the policies of conformity. It would be an error to assume that this was invariably the case.

In the long run it is of course true that the mills are hardly more than intermediaries in the cotton market giving expression to the notions of value presumably held by the public in its demand for cotton goods. But as we have already seen mill consumption of cotton is not always coördinated with consumers' takings of finished goods. It is during these periods of maladjustment between mill activity and consumer demand that the mills may be said to act as independent factors in the price determination of raw cotton. At such times it sometimes happens that their price making powers are used to their own disadvantage. In the latter stages of a concurrent advance in prices of cotton and cotton goods, the tendency as already seen is to produce goods in excess of consumption requirements. The excess stocks are eventually worked off at lower prices and frequently with heavy losses. This means that for a period raw cotton was receiving price support from a mill demand which was not in reality based on consumer demand. What the mills later regarded as losses on finished goods might then properly be regarded as the excess price paid for the raw cotton the products of which had to be sold on a declining market.

Although the principle here set forth is supported by the events occurring in the spring of

1923 and the autumn of 1927, a hypothetical case will afford a clearer explanation. Let us assume a cotton crop of only eight million bales coming at a time of general prosperity when consumption of finished goods is at high tide. With only a normal carry-over from the preceding year, it is clear that the physical limitation of raw material should remove the danger of over-manufacture. The public is evidently in a position to take all the goods that it is physically possible for the mills to make, and at a much higher level of prices than has previously prevailed. The problem for the mills and the distributors is to locate this new price level, whereupon the correct price of cotton, economically speaking, would be that price which would enable the mills to work it into finished goods with the usual margin of profit.

What actually happens, however, under such conditions is a more intense competition between the mills for the limited supply of cotton. With a prospect of profits from rising prices, and a market disposed to take eagerly everything offered, the mills are desirous of working all their spindles and looms at full capacity. In an important division of the industry, full capacity means the resumption of night work on a large scale. Hence is presented the picture of the industry operating a greater per cent of capacity on a limited supply of raw ma-

terial than would be the case with a normal or excess supply of raw material. So paradoxical a situation effects a rise in the price of raw cotton higher than the economic level justified by the prices at which the finished goods can be sold. The conclusion is that under conditions which approximate those which we have here described, even if the industry is able to put the price of finished goods to the maximum permitted by consumer behavior, the price of cotton relatively will go still higher and eventually eliminate profits. It should of course be obvious that however scarce the staple is, its real value can never go beyond a price which is proportionate to the price which the consumers are willing to pay for the products.

Failure to grasp this principle, and to act within the limitations imposed by it, is no small part of the explanation for those periods in which mill men say, "We cannot make profits at the present high levels of cotton prices." In 1923 and 1924 with cotton ranging from 25 cents to 35 cents a pound this was a common complaint. It was beginning to be made in the autumn of 1927. But the mills, by choosing to continue at high capacity under such conditions, were at the same time acting to keep up the price of cotton and to keep down the price of the finished goods. The excess price which they were paying for cotton was in

reality a premium which they were paying for the privilege of keeping their looms running, their organizations intact, their workers employed, their communities busy, or the prevention of a still greater loss that might be involved in a shut-down.

Viewing again that very interesting period from October, 1927, to February, 1928, it will be noted that goods prices fell much more rapidly than was justified by the price of cotton. Putting the statement somewhat differently, but more correctly, cotton staple was receiving support in its market which was out of line with the support being accorded its products in the finished goods markets. This must have been due primarily to the action of the mills themselves in their reluctance to curtail operations. The margin by which the price of cotton exceeded the price to which it was theoretically entitled in view of the market for finished goods, no doubt measured quite accurately the degree of pressure under which the industry was laboring to keep its machinery in operation.

Having thus viewed the complications which are a joint product of the wild fluctuations in the price of cotton and of the nature of the production organization of the industry, we shall now turn our attention to the conflicting group interests which grow out of the industry's marketing problems.

IV

ADJUSTMENT TO FASHION CHANGES

Style changes have always been present as influences to reckon with in the textile industry. But since the war they have taken on new characteristics which have made them scarcely less disturbing as factors of maladjustment than the gyrations of raw cotton.

These new characteristics are manifested: (1) By the vastly greater breadth of their application; (2) By the frequency and speed of transitions; (3) By the ruthless completeness with which they are adopted.

In the voluminous discussions of fashion which have been written for popular consumption, emphasis has been placed almost exclusively upon the more striking elements which enter into the varying modes of finished apparel. These are the elements which are readily measurable and obvious to the casual observer, and which are always important from the standpoint of couturiers, garment manufacturers and apparel stores. They may be relatively unimportant from the point of view of the mills and converters.

For these more important divisions of the industry the implications of a dress vogue are vastly

more numerous and intangible than are contained in a standardized description of the vogue itself. This seeming paradox is explained by the fact that in reality no vogue is ever exactly attained. There may be universal conformity in such matters as the length of skirt, location of waistline, and character of silhouette. But aside from these, popular conformity exhibits nothing more than innumerable approximations. An extraordinarily wide range of choice is left for the individual in the expression of personal taste. To the observer this myriad of deviations may mean nothing more than innuendo or minor modification of slight consequence. To the mills, the converters, and the garment manufacturers they constitute the major hazard in the whirl of the modes. It is for them that corps of stylists labor incessantly to provide the endless variety of patterns, the unceasing flow of subtle color tones and harmonies, the inexhaustible array of weaves and surface finishes, the fine gradations of weight, color and feel that amuse the eye and ingratiate the touch, ever striving for the mode, ever bending away from it. The modulations and departures of this character which hover about prevailing fashions have been multiplied a thousand fold since the pre-war days. He who talks glibly and lightly of the incidence of the fashion problem in terms of short skirts and rayon under-

wear displays a pitifully inadequate knowledge of his subject.

It is of course true that the trend toward shorter skirts which began in 1923 and reached its culmination in 1929 was of no benefit to the cotton textile industry. Yet the fact remains that it was a gradual and consistent trend which in itself produced only a slight quantitative readjustment in dress goods and which was amply offset by enlarged uses of cotton goods for other purposes. The return to longer and wider skirts in 1930 which had been so eagerly looked forward to by many cotton enthusiasts brought no perceptible relief to the industry, but in fact coincided with the very trough of the industry's deepest depression. Whatever variations occur in cotton goods consumption as a result merely of changes in women's ideas of ample clothing are negligible as compared with the losses suffered from transient qualities and patterns. In particular lines of goods what so often appears as a shrinkage in quantity demand is in reality but the result of a change in quality demand.

Outside of the dress goods field, fashion has played its most spectacular rôle in recent years. It has encroached upon that classification of textile products known as "staples." Prior to the war,

approximately 80 per cent of the industry's output was staple in character, that is, consisted of cloth constructions or types which did not vary from year to year. Sheetings, print cloths, denims, gingham, osnaburgs, drills, ducks could always be produced in volume in good times and in bad, in season and out of season, with the knowledge that their production involved no risk. Sooner or later the output could be marketed with assurance of a fair profit, so inevitable and so insatiable was the ultimate demand.

But at the present time it is doubtful if 20 per cent of textile products could be regarded as staple in the sense of commanding a dependable market from year to year. After a short period of intoxicating popularity immediately following the war, gingham suddenly and without warning were dropped into the discard. Almost over night, scores of mills were suddenly deprived of their accustomed functions and forced into a long and painful process of readjustment. Eventually gingham returned to the scene, but in scarcely recognizable form. They had been turned into style goods!

Even the sturdy denim, certainly the least pretentious of fabrics, symbol of all that is most unchanging in our national life—honest toil, was

wrested from its unassuming position and carried into the realm of fashion. Under the direction of skilled converters, it is today subjected to the most elaborate finishing processes and appears in many splendid guises to delight the aristocrat as well as the workman.

Sheetings can no longer be turned out in standardized counts and widths in any desired quantity with the old time impunity. Here the influence of fashion is exceedingly subtle, continually demanding new widths, and finer counts. The continual shifting in the market demand for the various constructions is ample evidence that sheeting is no longer just sheeting. An increasing percentage is frankly style goods finished in a great variety of colors to meet the modern requirements of color harmony in house furnishings.

Perhaps in no division of cotton fabrics have such radical changes of status occurred as in those groups suitable for house furnishings and interior decoration. Draperies, hangings, curtain materials of all sorts, couch covers and pillows, upholsteries and bed spreads have all been converted into the most individualistic types of specialty goods, with the fashion element uppermost. The basic materials from which they are fashioned with such varied and happy effect were not so long ago wholly unknown to these particular uses, and were not con-

sidered as proper fabrics for introduction into the home; as for example, the lowly osnaburg once used primarily for bagging, now favored for hangings and couch pillows.

These style developments have added immensely to the market for cotton textiles, and have probably more than offset the inroads of silk upon cotton dress goods. But while contributing to the volume of the mills they have likewise brought new problems, because of the continual pressure of style changes which they impose, and the losses which result from failure to achieve prompt and never ending readjustments.

It is not to be supposed that fashion limits itself to the elements which are associated with the artistic. Often its behavior is motivated by utility alone. Garment manufacturers often undergo radical changes of ideas as to the most convenient widths of the various types of goods for cutting-up purposes with results that are momentarily more or less tragic for certain groups. Interior decorators for no known reason will suddenly insist upon different construction specifications in plushes and draperies. Automobile tire manufacturers as a result of their own laboratory experiments will unexpectedly demand a wholly different quality of tire cord or fabric, or change radically the existing ratios between the different

grades. Manufacturers of automobile tops and rubberoid materials of all sorts are by no means enslaved to a basic fabric which is constant as to weave, weight and count. Even the users of wrapping twine are by no means uniform in their consumption demands for that commodity. Practice of merchants and manufacturers relative to wrappers and containers is ever shifting so that the makers of cotton cord and twine are never certain of their market.

So it is that erstwhile staples of every type and description have lost their former status, and have become either novelty goods subject to varied style treatments or else have become victims of highly erratic judgments as to their utility. They no longer constitute the comfortable haven in which so many of the trade formerly found refuge from the confusion and hazards of fashion goods.

The greater breadth of application of the style factor has been matched by the greater speed with which basic changes occur. It has been often said, apparently on the best authority, that prior to the war the progression of fashion was orderly and deliberate. Inspiration started in Paris one season, bore results among the upper strata in the United States in the following season, and became the popular mode for the masses the next season. Now these progressions have ceased to be gradual,

particularly as regards material, quality, and finish of the fabrics used. As we have previously pointed out, the more or less gradual changes in garment lines are of but slight importance for the industry. In fashion changes, New York treads immediately upon the heels of Paris, and at times succeeds in getting a stride or two ahead; and current styles on Fifth Avenue are on simultaneous display in every city and town in the country.

It is not likely that this greater sensitivity of fashion response is temporary in character. Greater style consciousness is the inevitable concomitant of a wider and more abundant diffusion of wealth and education. As time passes even more effective agencies for the distribution of fashion knowledge will be devised, although the fashion journals, the national advertisers, the talkies, the radio, and the department stores already provide speedy and efficacious service in this respect.

As to fabric material, fabric design, color treatment, and ensemble combinations, there is little prospect of greater fashion stability. In a society growing in wealth, in standards of taste and living, in fertility of ideas, in the fluidity and tolerance of its conventions; its communication and transportation facilities overcoming all obstacles of space and time; displaying an ever quickening tempo in all its social and economic activities—there is not likely to

occur any great crystallization of ideas relative to personal and household adornment. This becomes all the more certain now that style is no longer a class phenomenon, but has become a mass phenomenon. The struggle of individualism to keep ahead of the masses will continue, but with this difference—that the masses will refuse to be left behind.

This rush of the masses to speedy conformity with the fashion dictates of the upper strata accounts for the ruthless character of modern style changes referred to above as the third in the triumvirate of new distinctions. From the more obvious requirements of present day fashion there are but few deviators. Whatever is the vogue is universal within the limits of the range allowed for nice expression of personal taste. The significance of this to the textile industry lies in the circumstance that those mills or converters whose fashion experts and designers are fortunate enough to produce the fabrics and patterns which meet popular favor are caught in a swirl of fabulous prosperity. Those less fortunate, after losing heavily on their unsuccessful designs, have the choice of last minute imitation or the bankruptcy courts. A fabric or design that is in vogue is extraordinarily alive; a fabric that fails to strike the popular fancy is dead as Hector. There is but little middle ground. For mill men and converters, as well as cutters-up and mer-

chants, the erstwhile protecting refuge of designs which are "betwixt and between" no longer protects.

Much of the discomfiture which converters and mills have suffered as an incident to style changes is due to notable changes in the field of retail merchandising. There have been radical changes both in the structure and the methods of the distributive system. An increasing proportion of retail business in piece goods and apparel has been taken over by the large units: department stores, chains, and mail order houses. For buying purposes many of the largest department stores have formed coöperative purchasing agencies; and their example has been followed by the great majority of small, independent dealers who have formed either "voluntary chains" to get the benefit of large scale buying, or else have set up "buying syndicates." Thus it has come to pass that the great majority of the buying units in the cloth and garment markets are larger and more powerful both financially and in market wisdom than the majority of the sellers.

This change in structure has been accompanied by the development of more alert and scientific methods in the adjustment of commodity stocks to consumer demand. The goal of successful merchandising has come to be recognized as accurate

appraisal of consumer desire and an immediate response thereto. Scientific salesmanship is no longer an exercise in overcoming the buyer's resistance, but expertness in ascertaining his wishes. This element of resiliency in merchandising policy demands careful selection and quick disposition of stocks. Goods offered for sale must be within the range of the latest fashion ideas.

A selling policy of this character is wholly incompatible with the traditional buying of goods in large quantities and the placing of orders well in advance of the season's requirements. Hence dealers while resorting to the devices of limited and rapidly moving turnovers in style goods have also sought to reduce the time period between the placing of orders and the delivery of the goods. It has been comparatively easy to carry out these ideas through the use of the coöperative buying devices whose orders bulk large for the group but provide small lots at advantageous prices for the individual units. Even the wholesalers in piece goods and apparel have been making orders of gradually diminishing size in conformity with the generally adopted hand-to-mouth policy.

In the garment manufacturing division, the dominant controlling unit in recent years has come to be the type known as the jobber-manufacturer. He has but little capital investment in plant or

equipment and usually has a very poor financial rating. His chief asset is skill in designing, or design copying, and trading. His procedure is to enter into contracts for the manufacture of apparel for delivery to clothing jobbers and large retailers, but the actual work of manufacture he turns over to numerous small sub-contractors providing them with the materials and specifications.

Although the business of the jobber-manufacturer may be individually large, and his turnover rapid, his poor financial rating usually restricts his material commitments to the dimensions of his orders in hand. His activities merely reflect and intensify in the market the prevailing ideas of the retailing group. Yet the size of his business makes his bargaining power as a buyer of apparel goods an exceedingly important force in the cloth markets. It is not a force of stability, but an agency for magnifying the superficial and often whimsical moods that continually play upon the dress goods market, one moment having their origin in the cotton market, another moment wholly under the influence of new fashion rumors, and then again actuated by the weather, or by the still more evanescent opinions of the business outlook in general.

Thus we see that the entire mechanism of the marketing division of the textile industry has

undergone changes in the direction of greater flexibility and quicker adjustment to real or imagined consumer requirements which in their turn have likewise assumed an enormously greater variability.

But no great progress has been made in transmitting this flexibility back to the mill end of the industry. Inflexible and unadjustable as ever it is more exposed than ever to the forces of change. Converters, jobbers, garment manufacturers, industrial consumers, and retail organizations having individually and collectively discontinued their rôle as shock absorbers for the mills, the latter are compelled to meet the forces of change somewhat in the manner of a head-on collision and with the results which are typical of this form of contact.

If we think of the converting and marketing agencies as one division of the industry and the mills as another, the two divisions are in fundamental conflict. Yet each division is actuated by principles which are economically sound. It is proper that garment manufacturing organizations and the various retailing and wholesaling interests should seek to avoid the assumption of undue risks. To be loaded up with appreciable quantities of unsold goods at the moment when fashion reaches the turn is an open invitation to disaster. The converter obviously cannot undertake to place orders

with the mills in large volume, until he has ascertained the quality and quantity of demand from the distributive agencies. The latter clearly cannot place orders with the converters in large volume until they have appraised the character and magnitude of the consumer demand.

The converter's inducements to early offerings are further dampened by a reluctance to give competitors a knowledge of his new designs. There is a decided Monte Carlo atmosphere in pre-seasonal preparations. From the wide range of patterns and finishes which his artists design, the converter himself cannot pick the winners. He knows that the majority of them will be duds. He expects that a few will be popular with the trade, and hopes that one or two will prove to be the sensations of the season. But there is no *a priori* method by which he can separate the fortunate numbers from the unfortunate. He must await the verdict of the public and this verdict is not available much in advance of the season's openings in the leading shops. To canvass the trade prior to his psychological time would be but to reveal his offerings to competitors, and so invite an immediate copying of his popular designs. Thus mutual distrust, as well as inability to foresee consumer behavior, plays its part in delaying advance operations on any important scale.

But in the meantime, what of the mills! While converters, garment manufacturers, merchants, *et al.* are by ingenious tactics agilely sidestepping risk, for themselves, the only recourse of the mills is to assume risk in greater volume by manufacturing hopefully to stock, or accept the worse alternative of drastic curtailment. Thus in precise proportion as the one division of the industry escapes risk the other is forced to assume it, since the more general the postponement of dealer and converter orders the larger the mill stocks must be in advance of the receipt of these orders.

It is a disadvantage which does not of course bear with equal weight on all mills. In many lines nothing is to be gained, except an occasional speculative advantage, by the delaying of orders. And, as we have previously pointed out, in times of rising prices for the whole line of textile products neither mills nor converters are averse to a program of inventory enlargement. Often the mill products are affected by a style change only as regards the ultimate processing which they are to receive. In other words a style change does not always go beneath surface treatments. The converter, however, can never be indifferent to the consequences of a fashion change. If he is forced to wait until the beginning of a season for dealer orders, and in the meantime goes ahead with a

policy of stock accumulation, he may at the last moment find his designs unpopular. The opposite may happen, of course, in which case he is extremely fortunate and will enjoy fabulous profits at least for a brief period.

The defensive arrangements which converters as a group have so successfully set up against the risks of early seasonal operations have not always been matched by equivalent precautions as the season's operations draw toward a close. Sponsorship of a particularly profitable design all too frequently engenders a spirit of over-confidence as to its lasting powers. The intensity of popularity of a style number is no index of its length of run. The most eagerly sought for designs not infrequently suffer a virtually complete cessation of demand overnight. In particular cases a converter is more than likely to plunge heavily in his commitments on a particular design, risking against the possibility of its sudden demise the enormous profits which will result from a sustained demand. Not infrequently the drastic markdowns on excess stock following disappointments of optimistic expectations will largely nullify the profits of the prosperous period.

Hence the converting business is by no means a stable or uniformly profitable pursuit. It is frankly committed to a policy of speculative

profits in connection with those price fluctuations which originate from the raw staple. And despite its attempts to avoid risks of a certain character arising from style changes, it does not under certain conditions hesitate to leap confidently into a perfect maelstrom of speculation when the opportunities seem attractive.

In the business of supplying consumer goods the major test of an economically sound production and marketing policy is the degree of consumer satisfaction which results. The frequency and the nature of style changes are but the expression of consumer desires and must therefore be taken for granted in any program of reform. Whatever problem aspects they present the industry must accept, not in a spirit of resentment but in a spirit of conformity. The task of the industry is clearly that of establishing a network of inter-relationships among all groups and functions which is so adaptable that the readjustments incident to fashion changes can be effected with a minimum of waste and inefficiency, and with only that type of economic conflict which properly arises in the course of constructive competition. With such an organization the hazards from style changes would still be present, as would the hazards arising from the raw cotton market and from the further use of rayon, but with this difference—they would be

distributed evenly throughout the industry rather than upon the shoulders of particular groups within the industry. Thus would be removed the speculative rivalries which are directly responsible for the continuing maladjustments. The problem clearly calls for basic readjustments within the industry to the end that merchandising policy and manufacturing policy shall be brought into harmony.

Within certain limits conscious and voluntary coöperation between individuals in the same group could do much to lessen instability. For example, a careful and collective limitation of stocks and production schedules by the mills whenever over-expansion is threatened would not only shorten the periods of depression, but make the declines much less severe. Collective action of this sort is conditioned upon dependable and complete information relative to production and inventory data. It also requires the services of a central agency to inaugurate and coördinate the adjustment behavior of the many different units.

Services of this character are already being performed by the Cotton Textile Institute. Organized in 1927, it had within a year's time a membership of 452 firms and corporations controlling virtually two-thirds of the country's active spindleage. It operates through regional associations, keeping

these groups informed as to general production activity, the status of stocks on hand and unfilled orders, and acts as a medium through which co-ordinate action may be taken in preventing over-production. By no means the least valuable of the Insitute's undertakings are its researches designed to find new uses for cotton products, and its attempts to aid the industry in meeting its technological problems.

No doubt much of the lack of adaptability in meeting style changes, and in coping with new materials such as rayon, is due to technological shortcomings which might well be remedied by expert advice.

It is, of course, true that standardized statistical information and standardized collective behavior are of but little value to those who are producing novelties. These factors must, as has always been the case, depend upon individual acumen, and take individual risks in the prosecution of their business. Progress calls for innovations, and regardless of the havoc which the innovators may play with their competitors, their existence must not only be tolerated, but encouraged. The hazards which they create cannot and should not be directly combated; they can only be absorbed, and the real problem involved is to widen the area of absorption.

Moreover, voluntary, collective behavior cannot settle the question as to the location of the storage function. Whatever be the industry's form of organization, and whatever be the practices of the retail distributors of its products, there must always exist somewhere in the channels between production and final consumption adequate supplies of goods in more or less finished form to act as a buffer for current maladjustments between the production rate and the consumption rate. It would manifestly be uneconomical to maintain a productive capacity so great as to care immediately for the peak requirements of consumption.

Now, the practice of retailers in hand-to-mouth buying, actuated as it is by the desire to postpone orders as long as possible and get immediate delivery thereupon, has the effect of throwing the storage function back almost entirely on the mills. Converters prefer to buy from mill stocks where possible, rather than buy in advance, and in this act there is nothing morally reprehensible, yet it serves to impose more heavily the storage function upon the mills with all of the speculative risks involved.

It is not illogical that retailers, wholesalers, and converters should seek to avoid this type of risk (when prices are not rising or when style changes are imminent) nor is it illogical that the mills

should perform the major part of the storage function. The difficulty lies in the ability of the mills to incorporate this risk into price. Experience has shown that the greater the risk the lower the price, rather than the opposite—a fact for which the peculiar organization of the production division of the industry is to blame, as previously explained.

Another problem incident to the frequency and completeness of style changes lies in the inability of the industry with its present organization to allocate promptly back to the small and numerous mills the proper share of each one in the new type of goods. Not infrequently a mill is hopelessly at sea as to the proper line of goods to produce. Often expensive changes in fabric constructions are resorted to with no better results than before. It might be maintained that such problems are purely individual in character, inherent in the nature of the industry, and therefore, irremediable. Nevertheless, there is no reason why the staunchest individualism should not profit from an arrangement which enables it to make more intelligent decision. The production end of the industry now has but little inkling of an approaching season's style demands until the converters have completed their showings, assembled the orders of dealers and garment manufacturers, and transmuted these

orders into orders of their own to the mills and into contracts with finishers.

This chapter has frankly attempted to show that as between the mill interests and the distributing interests, the developments of recent years have caused the textile industry to become a house divided against itself. So sharp and so numerous have become the points of conflict that tolerance of them is approaching the limit of the industry's ability to endure.

OBSTACLES AND ILLUSIONS IN THE WAY OF REFORM

In the cotton textile industry the years 1929 and 1930 were distinctive not only because they brought forth the culmination of the forces of adversity which had been steadily developing for a decade, but because they also witnessed a radical change in the attitude of mill men toward possibilities of reform. Complacency gave way to a frank admission generally that the organization and methods of the industry were archaic.

To understand the difficulties in the way of reform, it is essential to appreciate the reasons why desire for reform was so long in coming.

Until recently a small independent, isolated mill could be operated as a profitable unit. Its machinery was standardized, its products stable for the most part, and its marketing methods virtually automatic. The requisite capital could be supplied by any community. In the weaving of coarse and medium count goods, no great skill was necessary, hence the only question relative to labor was the adequacy of supply.

These characteristics made the industry particularly suitable for the South, where hundreds of

communities were eager for greater economic activity, but did not possess at the time the right combination of technical knowledge, capital and resources, or markets which would make other types of manufacturing feasible.

To establish a mill it was only necessary for the promoter to enlist the support of a few local friends to the extent of making available a sum which would assure a beginning equity in the venture of from 50,000 to 100,000 dollars. For the remainder of the capital a part could be secured via the loan route from bankers and a part from the machinery manufacturers. It was not uncommon prior to the war for the machinery manufacturers to accept, as a considerable part of their payment, stock in the proposed corporation, which would later be gradually liquidated as the business became established. The character and layout of plant and equipment would be left to the specialized mill engineers and to the machinery manufacturers. All that remained to be done was to import a works manager, two or three mechanics, choose the labor force from the army of applicants which crowded the gates, open the selling account with a New York commission house who advised as to the character of output, and the project was under way.

An industry of these specifications was to the South of ten and twenty years ago like manna from heaven. There was no waiting for investment bankers to determine the most efficient mode of its gathering, or for wise financiers to decide upon its apportionment. Instead there was a wild scramble for it from a thousand industrially hungry communities.

So the South came into textile dominance with its mill units small, numerous and widely scattered. Ownership and management were in the hands of those who were local in place and in major interests. Consequently mill administration has been shaped more by considerations of personal prestige and community welfare than by the long range profit motive. It has exhibited the most extreme and the most tenacious form of individualism to be found in any of the major industries.

The historical background, the economic setting, the atomistic and disjointed structure have served to create not only physical obstacles to reform, but also a philosophy of independence which resisted vigorously any collective effort toward modifying individual behavior in the interest of the group as a whole.

In New England, although the mill units are much larger and in a more compact area, collective action was delayed by another type of individual-

ism. While the individualism of the South was that of youth and adventurous pioneering the individualism of New England had become that of satisfied old age approaching the end of a highly prosperous and respected life. Many of the great mills had become as regards ownership merely family heritages. Closely held by successive generations, management in many cases had become badly ingrown, with all of the defects that term implies. Under such conditions old organizations that have proved successful and old methods that have been for generations profitable are not readily surrendered.

In other cases the process of constructive adjustment in New England was made difficult by the placing of proprietorship in the hands of trustees. Where this had been done the situation was too rigid for change of any type other than liquidation.

Probably a more fundamental obstacle to the concerted adjustments which modern conditions demanded both in the South and in New England was the obvious inadequacy of the conventional devices for production control and market analysis. The products of the industry are such that they cannot be standardized even for a season, and cannot be reduced to a common denominator for purposes of measurement. No stable basis of

cost can be ascertained because of the intense variability of the raw material, the changing character of the output, and the wide range of conditions under which manufacturing operations could be carried on. As we have seen, many of the complications within the industry do not arise so much from the actions of direct competitors as they do from the inter-relations of spinners, weavers, converters, finishers, commission merchants, wholesalers, garment manufacturers, interior decorators and large scale retail distributors. The mere enumeration of these constituent units shows how much the industry is given over to the division of labor idea. No one factor covers more than a small part of the long span which constitutes the bridge from raw material to ultimate consumer.

Any program of reform to be effective must be equally applicable to all these groups. Any one group can by ill considered action set up a series of impulses from which the other groups have no adequate means of defense. This is not to say that the powers of self preservation do not vary somewhat from group to group.

The commission merchants and brokers are less vulnerable to adverse developments than any other group. The next most favorable position is occupied by the converters. Then come the weaving

mills, with the spinners occupying the position of greatest danger. The last named group, if we regard it as made up only of those mills whose only product is yarns, is wholly beyond the help of any form of ingenuity or resourcefulness. They cannot produce a product which is unique, they cannot use machinery which is not standardized, they cannot resort to methods which are not generally known. The only permanent advantage which one spinning mill has over another can scarcely be other than fortuitous in character, consisting of such things as a particularly cheap labor supply, or a low initial cost of construction, or a management which is shrewd in its cotton market operations. A somewhat wider range for the exercise of management skill is available for the weavers, and a still wider range for converters. In general the closer a group to the final distributing process, the less the degree of danger from those forces over which it has no control.

To fabricate and apply programs of coördination sufficiently comprehensive to embrace the motivations and practices of these diverse groups is therefore a task the failure of whose accomplishment is not a matter of great surprise.

Another fundamental bar to reform is the continual inflow of new units into the industry. In the South mill construction goes on apace in bad

years as in good, apparently with no thought that a majority of the already existing units are having difficulties in meeting expenses. The South has yet to experience a single year in which it failed to show a substantial addition to spindleage, not to mention looms and finishing equipment whose growth has been still more rapid.

This paradoxical behavior may be explained in part as due to the great unevenness of the profit situation at any given time. The tremendous variety of cloth constructions and specialty goods assures a condition of prosperity in certain lines even when the majority of products are languishing. The emergence of a profit spot anywhere is the signal for an immediate expansion of plant capacity in that direction.

Furthermore there is always the possibility that a new unit may be fortunate in the development of a line of products which will make a special appeal to the trade, regardless of its attitude toward others. In the manufacture of new types of goods or of novelty types in general there is always an element of adventure. Regardless of today's drabness, tomorrow's rainbow of promise never fades.

Moreover, there is ever present in the planning of new enterprises the consideration of speculative profits from raw cotton. The extent of this particular motive can only be conjectured, but

there is much evidence as a basis for confident inference. Very few cotton mill managers can be prevailed on to state definitely and completely the character of their cotton transactions during a given year, although they are generally willing to give full information on all other transactions. The exception is obviously not without its significance. Were raw cotton transactions conducted solely with a view to the elimination of the speculative element, there would be pride in revelation rather than in concealment, if the attempts were successful; and comfort in the evidence of meritorious business conduct if they failed. The operations would more often than not become a part of the management's efficiency exhibit.

There is still present in many southern communities as a further incentive to cotton mill construction the desire to establish new units as a part of a program of community promotion. Especial inducements are held out in the form of tax rebates and rescissions, or other prerequisites of the type which the local government or Chamber of Commerce can offer. Special local advantages, such as climate, water power, abundant labor supply, and cheap land, are emphasized with great vigor.

Moreover, there is also extant in the South as a powerful psychological influence the common belief that any energetic and courageous individual

can justifiably undertake the cotton mill business. It is generally supposed that whatever skill is necessary is of the mechanical variety and can be procured from the "hired men." Until 1923, there was justification for this attitude since up until that time inferior management in the South could thrive at the expense of the higher cost units in New England.

Now that competition with immediate neighbors has displaced in most lines the struggle against New England products, the validity of the "natural aptitude" argument has disappeared in fact, despite its continued hold on the public imagination.

Altogether the incentives which we have mentioned impart to the industry an irresistible lure. Like the gold fields of old, it draws the individual prospectors ceaselessly onward, though the bones of their fellows already whiten the plains.

If the industry is ever to attain stability, it is imperative that it hedge itself about with walls sufficiently high to check this ceaseless inflow of poorly equipped and ill advised entrants. The only way in which this can be done is to raise the standards of performance within the industry to a level which is attainable only to those possessed of great skill, and abundant capital resources.

Yet with the present organization of the textile industry, the establishment of high standards of efficiency is remote. Such progress as can be made in individual enterprises under present conditions will be largely vitiated by the deficiencies of the industry in its inter-relationships.

The increase of over one-third in the per capita output of American labor during the past decade is commonly attributed to the wide adoption of standard efficiency methods. Yet as we go from one industry to another we find that the degree of benefit from efficiency devices has varied enormously. Much of the variation is due to differences in the nature of the work to be done; much of it to the competitive practices and to the nature of the organization which the particular industry possesses. Consumer response to price and quality changes is another all important factor in determining the fruitfulness of efficiency in a particular case.

In certain aspects of efficiency, the textile industry has made progress during the decade. Particularly notable are the improvements in the finishing division. Machinery, materials, and processes which aim primarily toward improved quality and style characteristics have probably received the lion's share of scientific attention.

But the conventional, standardized type of efficiency which with mechanical and mathematical thoroughness strives primarily for greater output, lower cost, and exact records has probably received no further application than has accidentally been accorded it by local managements.

The value of any so-called efficiency device is to be judged ultimately not merely by the particular enterprise which inaugurates it, but also by the industry as a whole and by the consumer. At this time the organization of the industry is such that the standard forms of efficiency methods can amount to scarcely more than temporary advantage to the individual enterprise. From the standpoint of profits there will be no advantage to the industry as a whole.

By way of illustration, let us suppose mill "A" to be the practitioner of a newly adopted efficiency program. An improved system of accounting enables it to eliminate certain wasteful methods, and certain unprofitable lines. Certain machinery is scrapped and better equipment is added. Time and motion studies are applied to operatives with the result that greater yardage is produced per person and the percentage of "seconds" is reduced. Wider profit margins appear.

But to what end? Plant expansion inevitably results. To market the increased output, price re-

ductions are effected. Other mills feel the pinch of competition more sharply and probably lose their profit margins. Some of them are forced into insolvency to reappear as lower cost units after their capitalization has been written down. What has the industry as a whole gained?

Of course mill "A" has done a creditable thing. Its own profits are safer and larger. The public is getting better and cheaper goods perhaps. But for the time being the industry as a whole is none the less chaotic and unstable. Even if the example of mill "A" is followed by all other units, the resultant lower costs and larger outputs will mean nothing more than lower prices and sharper competition.

In other words, the present organization of the industry is such that greater plant efficiency creates no change for the better except within the walls of the particular enterprise. It does not extend to the important relationships which lie outside the mill. It leaves untouched the speculative and hazardous problem of purchasing and stocking raw cotton. It throws no light upon the difficulties of marketing. It does not solve the problem of adjustment to style changes. It does not soften the speculative rivalries between spinners, weavers, converters, wholesalers, garment manufacturers and buying syndicates.

We do not intend this as a doctrine of heresy. It is our purpose merely to remove any doubt that the greatest needs of the textile industry lie beyond the limits which are attainable by efficiency devices. There is indeed the possibility that too great attention at this time to such devices may delay reaching the goal toward which the industry is striving. This ultimate and all important goal is: to achieve for each unit within the industry, whether it be a spinning, weaving, converting, or marketing unit, immediate adaptability to all disturbances originating on the side of raw material or in the field of consumption. This involves avoidance of over-production, and over-stocking, quick adjustment to new style innovations, consistent policy in pricing and an economic procedure in merchandising.

However the goal is to be achieved, its attainment will for a long time require the entire attention and thought of the industry. For it to be sidetracked by a series of unrelated and scattered efficiency orgies would be nothing short of a calamity. Just as the problem of the industry is incomparably greater than the problem of the enterprise, so is the efficiency of the industry of far greater moment than the efficiency of the enterprise.

A fair example of the distinction here made is to be found in American agriculture. During the past decade, no type of business man has more courageously attempted to increase the efficiency of the farm as a going concern than has the farmer. The enormous increase in the sale of tractors and labor saving devices of the most efficient and expensive type is evidence of the fact. Further proof is found in the reports of the Department of Agriculture which indicate that the output of the average farm worker has increased by at least one-third within the decade. But to what end? A diminution in the number of farms and farmers, a decline in the prices and profits of the industry, and a general condition of over-production and depression so alarming that the first important act of President Hoover was the calling of a special session of Congress to struggle with the problem of rescuing agriculture from extinction.

No intelligent observer claims that the problem can be met by anything which the farmer can do within the confines of his own farm. His ills arise from his external relationships, from the play of forces which lie beyond his boundary lines and to which he cannot as an individual adjust himself. So it is in the textile industry.

A perfect contrast is supplied by the automobile industry which is composed of a few great

units. Here mechanical efficiency has been carried to the utmost limits. The full fruits thereof have been harvested, because each enterprise controlled the entire sequence of processes from manufacture to the final sale to the consumer: price control, inventory control, financing control, dealer control, the concentration within the same hands of raw material purchase, production schedules, styling, stocking, advertising and marketing. The automobile manufacturer was master of the situation and the situation included the whole sweep of operations from the blast furnace to the village housewife. The textile manufacturer is also master of a situation, but his situation is limited to his four walls and bounded on all sides by situations which are in the mastery of others, so that his intakes and his outlets he cannot even call his own.

Hardly less notable than the efficiency triumphs of the automobile industry are those of the railroads. They too reaped the full harvest of profits that sprang from better locomotives, longer trains, faster schedules, interchange of facilities, etc. But the railroads had such advantage as comes from monopoly of location, and from a rigid system of rates. A dollar in cost reduction was a dollar to profits. No increased outputs, no price cutting, no cut-throat competition followed success in cost reduction.

In the matter of prices the textile industry has no such protection as the railroads have, nor the benefit of enlarged consumption when prices are reduced. As the automobile industry reduced costs, it likewise reduced prices, but the reduced prices stimulated enormously the consumption demand which more than made up for narrow margins. As regards textile products there is no such elasticity of consumer demand as a whole. Hence, price as a weapon in the textile industry is confined to competitive operations between individual mills and is of but slight advantage relative to total consumption. In the various industrial uses of cotton products this same principle will apply except in those cases where there is competition with substitute products.

Again the textile industry is unlike the others in that increased profits on the part of a given management will cause that management to expand plant and equipment when the industry as a whole is already at over-capacity. Probably no other industry in existence can during a period of chronic depression exhibit so continuous a procession of new units coming into being. Such will always be the case so long as the industry consists of small unrelated units with so wide a range of costs, and with the ultimate fate of each unit so largely a matter of chance.

Granting that "efficiency" as contemplated by the typical scientific management "expert" may provide for individual mills a certain measure of advantage at least temporarily, the fact still remains that no permanent gains are likely to be achieved by the industry as a whole until it has brought into closer coördination the various units and functions which comprise it. This is the first and supreme task.

Not less controversial than the question of the value to be placed upon efficiency devices is the question of the proper disposition of the problem of night work in the industry.

Approximately one-half of the southern mills either work habitually at night, or are prepared to inaugurate night operations on short notice. From twenty-five to thirty-five per cent of the industry's output is night produced. This form of work is commonly charged with being mainly responsible for the condition of chronic over-production which the industry has suffered since 1923.

It is true that recourse to night work has increased greatly since that time. In most industries an increased resort to night operations has been the result of greater demand for products and a legitimate desire to take advantage of the enlarged opportunity for profits.

In the cotton textile industry the explanation is quite the contrary. Increasing resort to night work has been attended by an increasing difficulty in the marketing of products and a decided intensification of the general state of depression. In other words the practice has been adopted more generally not for the purpose of profit making, but as a defensive measure designed to lower production costs and so stave off the threatened losses from the downward movement of cloth prices. In such manner does this extraordinary industry through a condition of over-production stimulate still greater over-production.

The movement has hastened the extermination of the marginal units and forced out of operation spindles at the rate of about 300,000 per year.¹

Superficially one would explain the drastic shrinkage in the number of active spindles as merely one manifestation of depression. Such an explanation falls far short of the truth, when one examines the behavior of spindle activity. The number of hours worked per spindle has undergone an increase just as astonishing as the decrease in the number of spindles. In 1929 the average running time per active spindle exceeded that of 1928

¹ See table, p. 19.

by the amazing margin of 200 hours. Measured by Massachusetts standards this is equivalent to a whole month of additional time within the year. This of course accounts for the unusual decrease of over one million active spindles in 1929. Obviously conditions which forcibly remove from the economic scene one million spindles while at the same time increasing the activity of those remaining 200 hours per year per spindle are conditions of extraordinary distress for a large percentage of the industry.

YEAR	RUNNING TIME PER SPINDLE
1922	2,501 hours
1923	2,811 hours
1924	2,353 hours
1925	2,594 hours
1926	2,703 hours
1927	2,892 hours
1928	2,873 hours
1929	3,073 hours

If it be further borne in mind that the increase in night work was accompanied by diminishing manufacturers' margins, decreasing prices of cloth and yarns, disappearing profits for most mills, rapidly fading values of mill shares, while at the same time stocks of goods on hand were exceeding all reasonable limits and a steadily growing stream of mills were moving toward the auction block, one

cannot doubt that the more intensive night operation of spindles is for the most part but a gesture of self preservation.

Many mills which run at night openly condemn the practice; in fact the most bitter opponents of night operations are to be found among those managers who are forced to resort to them. These executives would willingly give up the practice, if like action could be exacted of their competitors. For the textile industry such a situation is not unusual. It is thoroughly permeated with customs and practices which however repugnant they may be to the individual operator must be retained because of the competitive pressure from the "other fellow." The other fellow characteristically motivates his action not by reference to absolute standards or to considerations of long time economy, but by the small competitive advantage which is discernible only in a relative sense and which at best is only momentary.

So with night work. It carries an economic advantage which is appreciable only so long as it is indulged in by a minority, and which diminishes in size at a rate which is proportional to the increasing percentage of those who seek it. In other words, the greater the number of mills which resort to night work, the less the advantage to be derived therefrom—a conclusion which rests upon

the obvious assumption that under the highly competitive conditions prevailing in textile manufacture, production economies from night work, provided it is general, are bound to be, and actually are, translated into proportionately lower selling prices.

The wider recognition of this principle no doubt accounts for the present considerable support which mill men are giving to the suggestion of legislative restriction of night work, provided such restriction is participated in by all the important textile states. The social justification for such legislation is obvious, particularly as regards the prohibition of night employment for women.

Such legislation would also bring back into production several million spindles and the proportional number of looms, thus restoring a goodly part of the investments which have been lost within the industry in recent years. Undoubtedly it would mean a strengthening of the general textile price structure, and resultant profits for a greater number of mills.

But the most pronounced and most permanent advantage would come through the greater stability which this reform would bring to the industry. The main reason for the "hair trigger" action of the industry in achieving over-production is the great ease with which existing plants can be thrown

into night operation. It takes but little in the way of incentive to persuade mill units to double output when it can be accomplished without additional investment in plant and equipment. Hence a promise of inventory appreciation from a rise in the price of raw cotton as in 1927, or a shift of consumption which suddenly adds to the marketability of certain cloth constructions brings lightning-like response from the spindles and looms which are not on regular night operation. Almost invariably these responses are so vigorous and prolonged as to overleap their purposes. The final sequel is a stage of unprofitable liquidation which effectually cancels the gains of the period of optimism.

It is night work, too, which accounts mainly for the extreme depth of a depression period, as seems so evident from an analysis of spindle running time in 1929.

With the industry operating entirely on a single day shift, changes in production schedules would naturally be restricted to much narrower limits. Arrival at a state of over-production would be much more gradual and necessitate a longer period of time. Where greater deliberateness is thus imposed, it is likely that corrective measures would be resorted to more promptly in case of tendencies to excess and that the stimuli to such excesses

would burn themselves out before the extreme consequences of their presence materialized.

Regardless of these considerations, it is possible to over-estimate the importance of the elimination of night work as a step toward reform. There is danger that much of the advantage gained would prove to be temporary in character. So long as the industry consists of small units, a strengthening of prices and more generous profit margins would inevitably stimulate the influx of new mills. We have already seen that a period of severe depression does not altogether check the installation of new plant and equipment. What would result from a solid prosperity is suggested somewhat from the experience of such years as 1916 and 1919-1920 when mills sprang up like mushrooms. No one can doubt that over-capacity by a wide margin is the chronic state of the textile industry, night work or no night work, so long as its present structure subsists.

This ultimate limitation upon the benefits to be procured from a surrender of night work applies likewise to the possible gains arising from a general shortening of hours. If the standard working day can be reduced to 8 hours and the consequent higher costs per unit of output be met by a more economic relationship between costs and selling

prices, well and good. But no such logical outcome could be expected from the industry as it is now organized. The reform would in no sense remove any of the hazards with which the industry has to deal. Its first effects, a reduction of output and higher prices, would at once inaugurate a procession of new mills. Eventually the status of overproduction would be as chronic as before, with the additional disadvantage of a greatly increased physical plant and equipment to impose upon the industry a correspondingly greater "overhead."

As analysis of the industry proceeds, it becomes increasingly clear that the fundamental defect of the industry is its defenselessness against the inflow of unneeded capital. So long as this defect goes unremedied no program of reform, from the economic point of view, can produce results which are more than temporary and ameliorative in character.

VI

SOLUTION OF THE PROBLEM

In formulating a solution of the problem of cotton textiles there is no need to wander into the field of conjecture. The proper solution, whatever it may be, is but the logical next step from an understanding of the industry's ills. If we have succeeded in delineating the latter, the procedure for their elimination is almost self-suggestive.

As we have seen, the major influences making for adversity emanate from the raw material situation, from the changed character and significance of style changes, from a continual influx of new and unneeded capital, and from the radical transformations which have been wrought in the machinery and methods of retail merchandising and industrial consumption.

It would be futile to attack directly these new, dynamic influences. If it were possible, it would not be economically or socially desirable. The fluctuations in the supply and price of raw cotton are inevitable. It would surely be folly to anticipate their removal through the action of any agency now visible. A broader application of style elements to the entire range of textile fabrics is likewise a natural manifestation of social

and economic progress whose repression would be neither desirable nor possible. No one can doubt that the performance of the merchandising function through larger units and more alert methods is a transformation which has come to stay, particularly since it is avowedly partial to the interests of consumers rather than producers.

The fundamental quality of the new forces requires therefore their frank acceptance. Resistance to them is hopeless and uneconomic; the only reasonable alternative is scientific adaptation of the industry's structure and methods to their demands. With this principle, a majority opinion within the industry has already expressed agreement. But unfortunately attention has been centered upon modes of adaptation which are either half-hearted in character or wholly superficial.

Great hopes have been built upon the procedure inaugurated by the Cotton Textile Institute in 1927. The central aim of this organization has been to secure collective action in blocking the recurrence of over-production orgies. To that end, information is gathered from its members relative to production schedules, stocks on hand, market trends, etc., and made available to all as a guide for individuals in planning future operations. It is assumed that considerations of group interest will be of sufficient concern to the various man-

agements to induce them to resort to corrective measures prior to the actual appearance of over-production or acute price weakness in various lines. This sense of group interest is kept sharpened by a vigorous program of moral suasion, directed at members individually and through their association meetings.

In theory the procedure is beyond reproach. It is intelligent in purpose and prosecution, and has achieved a sufficient degree of success to warrant its retention by the industry after three years of trial. But the plan has this one basic defect, that its complete success is conditioned upon the voluntary coöperation of an exceedingly numerous clientele. Where the units to be dealt with are so numerous, there can never be certainty of universal compliance with any stated policy. For example, despite the best efforts of the Cotton Textile Institute, conditions of intense over-production developed in the industry both in the autumn of 1927 and in the winter and spring of 1929-30.

The conclusion seems inescapable, that any device based on coöperative action, however worthy in motive, can at best be only ameliorative in character. It is far from being sufficiently sturdy to provide a foundation for a stable and lasting prosperity.

No substantially different conclusion can be drawn relative to the proposal to shorten the standard working days and eliminate night work. However effective such a reform might be in the improvement of certain social conditions, the only economic gain therefrom would be the diminished rate of speed in bringing about speculative overproduction. Its adoption would most certainly start a perfect avalanche of new mills which would probably not be checked until the same excessive degree of plant capacity prevails as at present. It would in no way touch the problems incident to style changes, merchandising methods, and raw cotton speculation. If the final economic results of such restriction should consist of nothing more than a doubling of the industry's daytime capacity, the achievement would hardly be worth the price.

A more vigorous application of efficiency methods, as previously pointed out, at best goes no further than to procure a betterment in individual cases. Anything like a general adoption of such methods merely puts competition on a lower price level, so long as the industry retains its present structure. Moreover, all the savings from a year of the most rigorous efficiency may be entirely offset by a single unfortunate transaction in the raw

cotton market, or by a single week's ill-advised production program.

In such fashion, the entire array of proposals which have been offered as solutions of the textile problem might be examined one by one and found wanting in one common respect: that they are all based upon the assumption that old dogs can be taught new tricks. They retain the same multitudinous managements with the same motivations; they leave untouched the forces of maladjustment, and provide no fundamental additions to the weapons with which they are to be opposed.

Quite obviously the situation is one which can be met only by the imposition of a new form of control—a form which will supply a continuity of supervision all the way from the spinning process to the final disposition of finished fabrics. No device capable of meeting these requirements seems in view other than a radical reorganization of the industry into vertical, integrated combinations. In other words, each unit of the industry, instead of being an enterprise with just one function, must be an enterprise which brings together all the processes—spinning, weaving, converting and selling—under a single unified control.

Since a successful selling organization must be prepared to fill orders of maximum size from large scale wholesale and retail buyers, as well as gar-

ment manufacturers and industrial consumers, and in addition offer a great variety of designs and constructions, these considerations must determine the minimum size of the proposed combinations.

It is also true that the successful performance of the converting function requires large-scale operations and access to great variety and volume of basic fabrics. Thus the requirements of economical merchandising and converting would seem to dictate the building on to these functions of the necessary manufacturing facilities. In other words there must be as a condition precedent large scale combination of spinning mills and weaving mills followed by the establishment of vertical connections between these large manufacturing groups and the groups which are entrusted with the problems of styling and merchandising.

This plan of organization takes for granted that the basic controlling influences in the textile industry arise from conditions in the market. Not only the quality of output, but also its quantity and variety are matters which the market and the market only must determine. This is a concept of management which regards the manufacturing process as being strictly technical in character, and concerned only with the scientific requirements involved in the proper use of raw material, personnel, and machinery. Its proper task is to

provide goods according to specifications and qualifications stipulated by those agencies which are acquainted with the character of the market. Such an arrangement represents a radical departure from the methods now in vogue. At present the problems of technical management are under the same administrative control as the policies which determine the quality, quantity, and type of goods produced. This in itself is sufficient evidence of the obsolescence of the present structure of the textile industry. But when we consider further that production schedules are commonly controlled by men who are not even remotely associated with the market and are wholly ignorant of the forces which are shaping market tendencies, there is no occasion for surprise that so many units are constantly on the verge of insolvency.

It is commonplace in American business experience that the secret of success in all industries which manufacture goods for popular consumption is to place merchandising considerations foremost and then require manufacturing operations to adjust themselves accordingly. It is a mode of procedure which calls for scientific salesmanship, effective advertising, and above all a selling price which is not subject to daily higgling but which is computed from an exact knowledge of costs. The

tendency is one which necessitates a narrow differential between costs and selling price and which produces adequate profits only on the condition of quantity output and careful regulation of inventory.

If the textile industry is to conform to those management axioms which have proved so important a factor in the prosperity of other industries, there is no alternative to its complete reorganization along the lines of vertical integration.

Placing under a single control all of the processes which are necessary to the production and sale of a finished product means for the textile industry not only an inauguration of the constructive features which we have mentioned, but also the elimination of those destructive characteristics which prevail throughout the present structure of the industry. As we have noted, the separation of spinner from weaver, of weaver from converter, of converter from commission merchant, of commission merchant from merchandising buyers and garment manufacturers, has resulted in the setting up of what is tantamount to a series of speculative mechanisms. Each point of connection plays its part in the clouding of the judgments and activities of the various divisions. Where there should be coördination there is conflict; where there should

be interest in the functions necessary to the work of the industry there is interest in the profits from fortuitous circumstances and shrewd forestalling.

With the adoption of unified control, every process within its jurisdiction is regulated with only one thing in view; and that is an efficient performance of its own particular rôle in providing the ultimate finished product.

To be sure no form of organization can be expected to provide smooth and even operations for the textile industry. No technical readjustments can overcome the disturbing influence arising from the seasonal character of textile products; and certainly no one has a right to assume that in the future style changes will be less violent and less disturbing in character. All that the industry can hope to do is to minimize the losses which these variables impose. The vertical type of control which we are here advocating will accomplish this not only through the greater directness and efficiency of management, but also through the complete change of motives which it would introduce. If the weaver is eliminated as an independent factor in production he will have no motive to enlarge output merely because of rising prices of cotton. Those who constitute the next division of the industry would likewise become totally disinterested in enlarged operations at such a time in view of

the fact that no increase in the actual consumption of cotton goods can be expected to follow rising prices in the raw cotton market. Thus the artificial and illogical consequences of fluctuations in the raw cotton market, leading as they do to speculative and artificial responses in the industry, could no longer under the new arrangement be of any importance except in so far as they would necessitate a revision of finished goods prices to maintain a proper profit margin.

In meeting the problems created by style changes, the proposed arrangement would produce a concentration of artistic activities within fewer and more competent hands. The great multitudes of patterns and designs which accomplish nothing more than a high mortality rate among their creators, and a tremendous amount of wastage through inability to sell the products with which they are associated, would be prevented. The distribution of orders to the mills based upon anticipated style changes would, therefore, be not only quicker and more direct, but far more intelligent. Manufacturing blindly to stock in the absence of orders would be reduced to manageable proportions. This complete, direct and immediate control of manufacturing units by the same agency which has responsibility for profitable selling, while securing speedy adjustment of production

activity to sales activity would at the same time achieve greater regularity of operations. If it serves its purpose, it would effectually remove all important types of fluctuations except those inherent in the changing seasons.

The present structure of the industry is such as to intensify the seasonal element and add thereto the far more violent disturbances which arise from the many speculative influences, the sources of which we have previously pointed out, and which are confined for the most part to relationships which are completely internal to the industry. With the removal of such extravagant orgies of expansion and contraction as occurred in 1927-28 and in 1929-30, a broadly applied policy of coördinating output to the immediate market would assuredly reduce the amplitude of machinery activity to a range of not more than ten per cent as contrasted with the present range of thirty to forty per cent.

With the greater part of the industry in the form of large vertical integrations, a greater stability in sales and in price structure could be gained by the development of market good will—a thing impossible for most of the mills at the present time. Good will is based upon the ready ability of buyers to identify the goods which they purchase according to their origin and quality.

This identification can be assured only in those cases where it is feasible to use brands and trade-marks, or the attached name of the maker. Such marks of identification are economically feasible only in connection with large output, since they require advertising and the active interest of those who are entrusted with the salesmanship. A further condition to the successful use of the principle of manufacturer's identification is the requirement that competitive lines be not too numerous. This is because the public mind obviously finds it more difficult to retain the impression of particular brands in the confusion attendant upon great numbers.

These requirements of consumer good will: that the product be identifiable, that it be produced in large volume, that it have the active support of dealers, and that it be not unduly crowded by a multiplicity of competitors—are conditions which can never be met by the many hundreds of textile enterprises which operate as small independent units. There can be no pride of parenthood. The products of each mill lose their identity and become utterly indistinguishable in the mass of similar products long before they ever reach the hands for which they are ultimately destined.

For the most part goods are bought by class and specification, with a considerable margin of

tolerance for specifications. Within a given class and count of cloth construction there is also adequate room for variability of quality, which only the expert can detect, but which the experts are not always interested in detecting. Hence in the primary cloth markets the emphasis is always on price. Price weakness developing at any point in the market on any given construction is at once transmitted to the similar products of all mills. No mill has any defense whatever except to withdraw its offerings completely. It can lay no effective claim to any distinctions whatever in the quality of its own product. This explains why a recalcitrant or badly managed 5 per cent of the cloth mills can by pushing sales without respect to profits entirely demoralize the market for the remaining 95 per cent of the mills.

While placing emphasis on price, the arrangement is one which obviously penalizes quality and makes more difficult the eradication of the inferior managements. A given mill may exercise the greatest care in the selection and blending of its cotton, in the spinning of its yarn; may be especially successful in smoothness and regularity of weave; be overly scrupulous in the elimination of seconds, and in cutting and sizing operations; and yet be forced to compete on the same price basis as an-

other mill in which yarn selection is poor and workmanship faulty.

The converter is in a somewhat better position, being able in certain cases to build up a regular clientele among apparel manufacturers, jobbers, and large retail distributors of piece goods on the basis of style and quality as well as price. But to good will of this character, converters have not as yet succeeded in imparting any great degree of stability.

As regards the great mass of individual consumers of textile products, whether in the form of apparel, piece goods or draperies, the origin of the goods is wrapped in deep mystery. Ascertainment of durability, fastness of color, and reaction to moisture is something that usually comes after purchase rather than before. Even so fundamental a matter as the materials of which the fabric is made is frequently vague and indeterminate. Hence a purchaser is usually unable to repeat an order if the goods are satisfactory and equally unable to avoid the products if they are undesirable. It is not a situation which encourages sound policies either in merchandising or in manufacturing.

It provides no reward for constructive, idealistic effort; and no penalty for the technically incompetent or the market trickster.

Paradoxical indeed it is that an industry which has been successful in the past decade in producing an almost limitless range of fashion goods and novelties in myriads of designs in order that it might keep up with the vagaries of public taste, at the same time keeps its operations so shrouded that the very consumers to whom it so frantically caters know nothing either of the goods or of their makers and are unable to exhibit discrimination even when they desire to.

In musing over this strange relationship between maker and consumer which is a thing of the past in most industries, the reader should not permit himself to lose sight of the major principle involved which has not so much to do with the failure of discriminating consumers to make connections with meritorious producers as it has with the more pressing problem of price stability. A more extensive use of identified goods and the good will that accompanies them means much greater resistance to adverse market influences. In the case of unidentified goods, the buyer shifts from the goods of one maker to the goods of another without being aware of the change, seeking only for the lowest price. In the case of identified goods, which we may call specialties, he is not only aware of the change, he is definitely reluctant to make it. It is possible, therefore, for competing specialty manufacturers

to meet a condition of trade depression by some diminution of output without the additional hardship of price demoralization. However adverse the forces of the moment his market never wholly leaves him. Among the many advantages of integration, not the least is the impetus which it will give to the development of specialty goods.

Although the combination movement in the textile industry is well under way at this writing, its progress will be slow. Since the converting and selling agencies are very large units and must continue so, the greatest practical difficulty in the formation of a merger of the vertical type is that there must be either a preliminary horizontal combination of many small mills, or else they must be gradually absorbed by a converting or selling house.

The first alternative is difficult because of the traditional individualism of the small mills. They will rarely give up their independence until forced to do so by the pressure of financial difficulties. Temporarily at least, a sufficient number of mills is in this plight to give encouragement to the merger movement.

But unfortunately a period of distress which creates the necessary willingness among the mills produces just the opposite effect on the bankers. The latter will not engage in extensive underwrit-

ing operations when the mills are a poor credit risk. The public cannot be relied upon to absorb new textile securities after seven years of steady decline in the value of mill equities. So far as the mills are concerned, combination must be achieved mainly by an exchange of stock. This always involves long drawn out and tedious appraisal operations, as well as the overcoming of differences of opinion as to true exchange values.

The procedure will not be simplified by the necessity of maintaining the right proportions of mill equipment to turn out the desired variety of products. However, to meet the purposes in view, it is not necessary that all units be in the same territory. It will no doubt be found advisable to have mills both in New England and in the South, an arrangement which has already been found to be satisfactory in several cases.

From a purely logical point of view, the ideal procedure in the formation of a great vertical combination would be to pivot the organization activities on a selling house. The character of the business which the commission house has established would serve as a guide in determining the character of the mills to be acquired. In like manner the character of the converting organization to be set up could be predetermined. The commission house having taken the initiative in the pro-

ceedings would the more easily and effectively administer the operations of the entire group. To gain the desired objective it is essential that the organization's highest executive powers be lodged in the hands of marketing and merchandising experts. It of course means a complete reversal of the prevailing view, which is that the distributive mechanisms are merely the means by which goods are to be disposed of and are therefore subordinate to the agencies of production. The sound economic view is the precise opposite of this. It considers the agencies of distribution to be the supreme arbiter in the guiding of production schedules; it is of necessity the fountain head of wisdom in regard to all policies and problems which rise above those of purely technical character. The reasons why the great selling houses should take the initiative in the constructive effort necessary to the reorganization of the industry are therefore quite fundamental.

Yet in actual practice, the incentive is lacking. This is largely due to the fact that the great selling houses have not felt the lash of distress so keenly as have the mills. So long as the volume of consumption holds up, the majority of the great selling houses will be able to show satisfactory profits.

Another serious drawback to commission house leadership in the combination movement is the somewhat embarrassing position which it would occasion during the period of transition. A commission house obviously cannot act as selling agent for independent mills when its own mills are producing similar competing products. The building up of a great vertical integration which can be relied upon to stand is usually a lengthy process. A commission house actively engaging in such a pursuit would probably suffer heavily in its business activities for the period required to bring the combination to completion.

In another section it was pointed out that not infrequently commission houses are compelled to "take over" mills whose accounts they have been carrying. It is a sequel to the policy of loaning on unsold goods, but when it actually materializes, no publicity is given to the matter. As a business policy, commission houses have no doubt found it inexpedient to let it be known that they are "carrying" certain mills. In view of this attitude of secrecy toward commission-house—mill relationships in cases of this character, it is not difficult to surmise that the logical leadership in merger movements will be slow to become the actual leadership.

The industry will be forced to proceed toward its objective in devious ways. In some cases, the

initiative will be taken by outstanding mills whose expansion programs will be carried out by the gradual acquisition of weaker units. When a sufficiently broad production basis has been built up in this manner, finishing and converting operations will be installed, after which the final step of an independent selling department will be taken.

In other cases, combinations will be effected through the offices of outside promoters who will utilize the holding company method, acquiring certain units by exchange of stock and others by outright purchase. An excellent example of this procedure was supplied by Mr. Homer Loring, who came into prominence as an efficiency expert through restoring to a state of profitableness certain New England transportation lines. With the backing of some New England banks of long experience in textile financing and with the active support of important textile interests whose properties were in need of rescue, Mr. Loring was able to build up a gigantic and completely integrated textile organization by the purchase of existing properties at bargain prices.

In other cases mills of long and respected standing who are able to continue operations as independents if they so desire, will, in recognition of mutuality of interests, voluntarily and without outside aid, bring about their union through a simple

interchange of stock and so gain a basis for the economical acquisition of converting, finishing and selling functions. ³

The equivalent of integration is gained when mills are purchased and operated by corporations who consume their products as raw material. For example, the rubber tire manufacturers have consistently followed a policy of enlarging their own production of tire cord and fabric. At present, approximately 75 per cent of this type of goods is produced in mills which are owned by the tire manufacturers.

In the same manner, Marshall Field & Company, a great merchandising organization, supplies a large part of its textile fabrics such as blankets and bed spreads, from its own mills. The Simmons Company, manufacturer of beds and mattresses, has followed a similar policy in meeting its fabric requirements.

A number of vertical integrations which approximate more or less closely the ideal form which we are advocating in this treatise are now functioning and without exception have exhibited greater stability during the industry's depression than the average of spinning and grey goods mills.

The Cone Mills, although engaged chiefly in coarse goods, denims, gingham, and cotton corduroys, have done wonders in the converting and

finishing of these fabrics. Their selling is done through the Cone Export and Commission Company, which is owned by the same interests, but which acts as selling agent for certain mills which are not in the Cone group in the distribution of non-competing goods. The Cone Mills are outstanding in efficiency and resourcefulness of management, have shown great consistency in the ability to earn a profit despite the intense degree of competition which characterizes their products, and the maintenance of a wage scale which is substantially above the southern average.

Another efficient and powerful consolidation operating in territory where most mills have suspended dividend payments is the Amoskeag Manufacturing Company. It has shown remarkable adaptability in meeting the unusually difficult conditions of the past two years, and so long as its present management remains intact will no doubt enjoy great prosperity.

The Pepperell Manufacturing Company, having mills both North and South, has developed the idea of integration to the utmost. Not content with its own converting and selling, it has directed a nation-wide advertising campaign designed to build up good will with the ultimate consumers. The famous Lady Pepperell sheets, no longer staples, but highly styled specialty goods, are packaged

by the company for the consumer. The company also produces work fabrics, broadcloths, lawns and marquisettes, and to garment manufacturers which use these fabrics labels are supplied in order that final consumers may know the origin of the fabrics which enter into their apparel. The Pepperell Company has had an unbroken dividend record since 1852.

In 1929, the Pacific Mills, also famous for their sheets and pillow cases, severed connections with a commission house and resorted to direct selling of their products.

In 1930, two other large mill organizations, the Wamsutta Mills of New Bedford and the Nashua Manufacturing Company of Nashua, N. H., discontinued commission house connections and set up their own sales offices.

The Berkshire Fine Spinning Associates is another consolidation of promise organized in 1929 by the union of five mills. In 1930, it acquired a sixth unit, the Parker Mills, and seems definitely headed under very able management toward a completely integrated type specializing in fine goods.

Still another consolidation of large proportions arising from the general prostration of 1929 and 1930 is New England Industries, Inc. This consolidation consists of five Maine mills and was

financed by the New England Public Service Company, a subsidiary of the Insull power interests. Although it does not own its selling agency, there is a community of interest relationship which makes the connection decidedly coöperative in character.

Of the recent combinations, perhaps the greatest publicity has been accorded the United Merchants and Manufacturers Corporation, Mr. Homer Loring's company. This organization is unique in that it was set up, and has since been administered, by an individual whose business career, though distinguished, had lain outside the textile industry. Moreover its bringing together did not follow the plan of gradual accretions to outstanding going concerns which might serve as staunch nuclei, or of concerted union through the mutual action of component parts, but was literally an almost simultaneous assemblage of units each of which was definitely subordinate to the scheme as a whole. The goal of complete vertical integration was attained from the beginning, but the enterprise is reported to be carrying its expansion program still further, even to the point of acquiring garment manufacturing plants. In view of its newness and the unusual features incident to its formation and operation, this merger has been regarded by many as somewhat experimental in

character, despite the unquestioned validity of its basic policies.

The Cannon Mills, largest manufacturers of towels in the world, is also a thoroughly integrated unit, which not only does its own selling in the primary markets, but also appeals directly to the consumer with goods that are trade-marked and nationally advertised.

The Riverside and Dan River Cotton Mills of Danville, Virginia, is another of the larger and more efficient of the Southern mill groups which does its own bleaching, dyeing, finishing and selling. It has been conspicuous for many years, not only in its enlightened social attitude toward its employees, but in its determined and consistent efforts to inaugurate throughout the industry as a whole more efficient and business-like policies in production and selling.

The history of the cotton textile industry contains many examples of combinations that have failed. During the war and post-war inflation period, combinations were formed on the basis of the grossly inflated values then prevailing, which amply explains their later difficulties.

At other times, combinations have been formed for the purpose of gaining a position of market dominance in relation to one type of commodity, as in the case of the Consolidated Cotton Duck Com-

pany, and the New England Cotton Yarn Company. Obviously a combination of this character defeats its own purpose, the moment it succeeds in raising prices, by inducing the organization of new competitors.

Other combinations have been formed, and these have been the most numerous, when the only purpose in view was the fancied economies from mere size. The basic defect of combinations of this type is that while they may attain economies in one direction, they only serve to magnify the evils which lie in another. Errors in production schedules, style adaptations, cotton buying and inventory policies are not reduced merely because the organization is large, and it is from these sources rather than from internal management technique that mill losses usually come.

Of course any combination, whether it be a well balanced vertical integration or not, stands more than an even chance of success if it is blessed with exceptionally capable technical management. But the greatest concern of the textile industry is not with the mechanical excellence of individual plants. Were maximum efficiency realized in the internal administration of all enterprises, there would still remain the vicissitudes which spring from their external relationships. Hence our interest is in the form of combination which, while endeavoring to

achieve technical perfection in its own manufacturing operations, at the same time strives to contribute positively to the achievement of a more economical performance by the industry as a whole.

It is not to be presumed that the general reorganization into vertical units which is here advocated could ever be extended to embrace the entire industry. This would completely overlap the goal which is sought. An open market in yarns and fabrics should be maintained, and buyers and sellers of these commodities should be free to utilize the services of commission houses and brokers as occasion demands. However successful vertically integrated combinations might be in attaining to the ideal of a balanced production undisturbed by speculative operations on the outside, it is not to be expected that they could reach mathematical precision under all conditions in taking care of their immediate requirements for all counts of yarn or for all types of cloth construction. A sudden increase in orders for certain cloth constructions might well necessitate the purchase of yarn or base fabrics from outside sources rather than incur the delay from local adjustments. Or, on the contrary, accumulations of certain yarns and constructions might occur at a time when their disposition through direct selling channels would not be

immediately feasible. Balancing operations of this character would be largely to the mutual interests of the various enterprises, the shortages of one enterprise to a large extent compensating for surpluses of another.

Moreover within the industry there will always be room for the highly efficient type of small specialty mills who will need the services of brokers or commission houses. By the same token, independent converters and finishers will always be present to cater to the needs of the small specialty units, as well as to provide a margin of elasticity for the integrated organizations. In the division of novelties and fine fashion goods the range of possibilities for the promotion of new ideas is too limitless to be completely exploited by the giants in the field. However, the small units will not be standard type spinning and weaving mills. Plants of this character will eventually be swallowed up in the larger organizations. The small independent in so far as he is able to retain his position at all, must do it where the important essentials to success are originality and artistry.

If the transformation of the industry proceeds in accordance with this concept, the primary cloth markets with their commission houses and brokers, and the converters will cease to dominate in the performance of their respective functions and be-

come merely accessory agencies. Instead of serving as factors of instability, periodically disrupting the even flow of goods through disjointed channels, they will become supplementary devices for greater ease of adjustment, at all times entirely subordinate to the general standards and policies established by the great integrated organizations.

No doubt with the same implications in mind, Mr. Charles Pinnell, President of Fred Butterfield & Company, a well known converting house, has stated succinctly his ideas on textile combination:

“My thought is a combination in which the merchant will do the development work. The combination will be composed of manufacturers, finishers and converters under one management, and they will distribute a finished product direct to the retail trade.

“The main purposes of the sort of combination I have in mind will be the attempt to get as close to the consumer as possible, to eliminate wastes in distribution wherever possible, to bring fresh, new ideas in fabrics to the women of the country as directly, as quickly, and as cheaply as possible.

“The distributing end would of course undertake to do the major portion of its total business on fabrics made and finished by the combination. The manufacturing end and the finishing end on

their parts would have to reserve the major portion of their output for the distributing end. But each one of the three should be permitted to do a portion of its business with outside interests in order that it would at all times be kept up-to-date and efficient, and that the finished lines might be well rounded out.

"The manufacturing end would confine itself strictly to its job of manufacturing, and the finishing division to its job of finishing, although both should be continually experimenting and suggesting new ideas from the mechanical side of the business. On the distributing end of the combination, however, would be placed the final say and full responsibility of styling as well as of distributing." (*The Textile World*, February 6, 1926.)

Throughout the entire business of textile manufacture and distribution, all important readjustments and an impressive proportion of the thought tendencies are definitely in the direction of closer contact of producing units and the consumer market. The premier function in the industry has come to be the merchandising function. But this function has a broader meaning than is customarily given to it. Its successful performance demands the converter as handmaiden, and the mills as obedient servants; it requires that cotton staple shall be merely a raw material and not a com-

modity for speculation; that profits shall come from the creation of values and not from shrewd trading between the component parts of the industry; that in the performance of the long sequence of processes from the cotton field to the cloth counter there shall be directness and coördination instead of indirection and conflict; that in the analysis of consumer requirements there shall be knowledge and precision instead of guessing and gambling.

Such is the mode of procedure, if the ways of King Cotton which now lead treacherously to losses and confusion are to turn broad and straight toward the goal of high wages and net profits.

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